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(54) A BLOCK WALL CONSTRUCTION SYSTEM AND COMPONENTS THEREOF

SYSTEM ZUR ERRICHTUNG EINER MAUER AUS BLÖCKEN UND KOMPONENTEN DAFÜR
SYSTEME DE CONSTRUCTION D'UN MUR DE BLOCS ET COMPOSANTS DE CELUI-CI

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Description

TECHNICAL FIELD

[0001] This invention relates to a block wall construction system and components thereof including a reinforcing interstitial spacer system and an interstitial junction spacer for use therewith.

[0002] The invention has particular utility in the construction of glass block walls, but is not limited to walls constructed of such blocks, whereby the invention may also have utility in walls constructed from other types of blocks.

BACKGROUND ART

[0003] With particular respect to glass block wall construction, a number of different types of construction systems are employed, each of which have their own associated advantages and disadvantages due to the special and somewhat unique characteristics of glass blocks.

[0004] One of the features of glass block construction which is making it become increasingly popular, is its high aesthetic appeal. This is enhanced by the use of modular blocks of substantially identical size and shape which are bonded in a rectangular matrix as opposed to an offset bond, the latter being preferred for brickwork in order to maintain the strength thereof. Subsequently, the bonding of glass blocks in a rectangular matrix generally requires interstitial reinforcement between the blocks to maintain the strength thereof.

[0005] Two principal types of binders are used with glass blocks namely mortar and silicone caulking. In mortar, a relatively strong bond can be achieved, however the appearance of mortar joints in glass block walls differs markedly from the appearance of silicone joints, and so these types of binder have different appeal to different people.

[0006] Silicone can provide an aesthetically appealing joint between glass blocks, it being of a similar colour to glass or alternatively being able to be pigmented to any desirable colour, and is able to be used with smaller spaced joints so that the joints do not detract from the appearance of the glass blocks.

[0007] With both types of binder, expansion and contraction of the glass blocks with variations in temperature needs to be accommodated. This is a major problem where the glass block wall needs to connect to either a frame or a wall made of some other material which has a different rate of expansion or contraction. As glass is extremely fragile this expansion or contraction can result in cracking of the glass blocks themselves or the joints if this expansion and contraction is not accommodated. Consequently, the use of a modular framing system has become popular with the construction of glass block walls, wherein a glass block wall matrix is constructed within a rectangular frame of a predetermined

size which allows for a void to be disposed between the interface of the periphery of the glass block wall and the inner surface of the frame itself along the jambs, the head and the sill of the frame. The void along the jambs may be occupied by a suitable flexible medium such as polystyrene foam to allow for the expansion and contraction of the glass blocks within the frame.

[0008] A series of these glass block wall frames can be constructed and interconnected to form a matrix of glass block wall frames which in turn form a composite wall of the appropriate size.

[0009] Notwithstanding the adoption of these types of framing systems for the laying of glass blocks, there is still a need to reinforce the joints due to the orthogonal bond required for the blocks. This is particularly so with the use of silicone as a binder which simply does not have the same inherent strength characteristics as mortar. Even with the increased strength characteristics of mortar, it is still necessary to use some kind of reinforcement when using this as a binder, particularly with external walls.

[0010] In the case of wall construction using mortar as a binder, 6mm diameter galvanised steel rod has been used which is embedded within the mortar layer to reinforce the bonding. In the case of wall construction using silicone as a binder, it has been found necessary to use a stronger reinforcement such as galvanised flat bar of 50mm x 3mm, which is positioned within the interstices of the joints by elaborate fixing methods.

[0011] Another problem with the laying of glass blocks is the need to achieve and maintain an orthogonal bond in order to ensure clean aesthetic appearance. Although the achievement of straight horizontal joints is relatively simple with most block laying techniques, be it brick laying or glass block laying, the achievement of straight and neat vertical joints is much more difficult. Consequently, the use of spacers to precisely space the blocks apart both horizontally and vertically has become standard practice throughout the industry to achieve clean, straight and consistent spacing between the blocks along the joints.

[0012] In order to accommodate both reinforcement and spacing requirements for glass block wall construction, the design of spacers has become quite involved.

[0013] With respect to glass block wall construction using mortar as a binder, the spacers are required to be quite thick and bulky to achieve glass block spacings of the standard 10mm adopted for mortar joints, whereas with the use of silicone as a binder, the spacers are much thinner, requiring them to be more complex in design. The complexity of the design of spacers is due in part to accommodating reinforcement members and in part to the complex shape of the adjoining end faces of the glass blocks.

[0014] In this respect, a typical glass block comprises two parallel rectangular side faces which become the exposed faces of the block and four adjoining end faces which orthogonally adjoin the corresponding edges of

the side faces. The ends of each of these side faces contiguously adjoin each other orthogonally to form a continuous circumferential edge of the block which is convexly curved at each of its corners. However, the profile of the circumferential edge is substantially concave whereby the corresponding edges of the side faces each define an outer cusp along the opposing sides of each end face as well as a central inner cusp which is disposed intermediate the opposing side faces of each end face. This inner cusp extends continuously along the circumferential edge of the block on each of the side faces of the block forming the same.

[0015] Due to the lesser reinforcement required with mortar joints, the design of spacers for glass block wall construction using this type of binder is relatively simple and consequently a variety of spacers are available on the market for this purpose. One of the better types of spacers for this purpose is the subject of Australian Patent No 608220.

[0016] In the case of glass block wall construction which uses silicone as a binder, due to the decreased spacing requirements of the blocks, typically being in the order of 3mm and the increased reinforcement required, the design of spacers has been much more complex. Two systems which are most commonly used in the trade in Australia are the subject of Australian Patent No 637665 and Australian Patent Specification No 29361/89 respectively. Both of these systems, whilst becoming popular, still have considerable disadvantages associated therewith.

[0017] In the case of Australian Patent No 637665, the spacer and reinforcement member are one and the same, in this case, being a member formed of a flexible plastics material such as flexible polyvinyl chloride. This member is dispensed in prescribed lengths which span the entire horizontal joint, being cut from a large roll of the same. Unfortunately, due to the flexible nature of the spacer material, the reinforcement is not as strong as can be achieved by the use of metal reinforcement bars and so the utility of this type of glass block wall construction is limited principally to internal walls, where the lateral loading requirements are not as critical as with external walls. Furthermore, discrete lengths of the member are cut and disposed between the blocks to form the vertical spacing. The discrete nature of the vertical spacers however provides no additional strength characteristics and so these members function solely as a spacer and not as reinforcement.

[0018] In the case of Australian Patent Specification No 29361/89, which describes what is commonly known as the "Steckfix" (trade mark) system, this system overcomes the loading limitation of the previous system to a significant degree by utilising a flat metal bar as the reinforcing member and discrete plastic spacers which are connected to the bar for the spacing requirements. The inherent strength of the flat metal bar significantly improves the loading characteristics of glass block walls constructed in accordance with this system and hence

such walls can be used both internally and externally. A problem with this system, however is that the spacers which connect to the flat metal bar allow for spacing in only one direction.

[0019] In the case of the flat metal bars being disposed horizontally, the spacer which is connected to the bar is only capable of spacing the horizontal joints and hence a discrete spacer is required to provide the spacing for the vertical joints. Conversely, if the bars are disposed vertically, discrete spacers are required to provide for the spacing of the horizontal joints. Again, as these discrete spacers are separate from the spacers which are connected to the reinforcing metal bar, they do not contribute at all to the loading characteristics of the wall.

[0020] Another disadvantage of this system is that only one side of the spacer conforms to the complex shape of the end face profile of the glass block, the other side of the spacer by virtue of accommodating the flat bar, does not conform to the complex shape of the end face profile. Hence the maximum strength that could otherwise be obtained from the bar if it was to more positively engage the confronting faces of both adjacent blocks, is not achieved.

DISCLOSURE OF INVENTION

[0021] It is an object of the present invention to enable for the construction of block walls with improved loading requirements whilst simultaneously providing for the precise spacing of the blocks along both the vertical and horizontal joints.

[0022] In accordance with one aspect of the present invention, there is provided an interstitial junction spacer for positioning and supporting a plurality of blocks in a matrix for a wall construction, said blocks being of the type having two parallel rectangular side faces and four adjoining end faces orthogonally adjoining the corresponding edges of the side faces and the ends of each other contiguously to form a continuous circumferential edge of the block, the profile of the circumferential edge being substantially concave, whereby the corresponding edges of the side faces define an outer cusp along the opposing sides of each said end face; said spacer comprising:

one spacer means having a pair of coplanar edge members of a prescribed thickness to space said one said end face from a confronting end face of another said block or a surface disposed in abutting relationship adjacent to said one said block;

an interconnecting web portion disposed between said edge members of said one spacer means to integrally interconnect said edge members together;

another spacer means having a further pair of co-

planar edge members of a prescribed thickness disposed in intersecting relationship with said pair of coplanar edge members to be integral therewith;

said pair of coplanar edge members and said further pair of coplanar edge members being spaced apart a distance commensurate to the spacing of a pair of corresponding said outer cusps of said blocks so that said one spacer means may be reposed in juxtaposition with the outer cusps of the circumferential edge of one said block along one said end face of said one said block, and said other spacer means may be reposed in juxtaposition with the outer cusps of the circumferential edge of said one block along an orthogonally adjacent said end face to said one end face of said one said block, to space said orthogonally adjacent end face from a confronting end face of another said block or a surface disposed in abutting relationship adjacent to said one said block; and

said one spacer means or said other spacer means is formed with reinforcement member retaining means between said edge members of said one spacer means or between said further pair of coplanar edge members respectively, to accommodate and retainedly dispose an elongate, substantially planar reinforcement member in coplanar relationship with said edge members and in orthogonal relationship with said other spacer means, or vice versa, respectively.

[0023] Preferably, the outer surface of each edge member of one or the other said spacer means is tapered inwardly, from the proximal end of the edge member to the distal end of the edge member. In this manner, the spacers can be used in the construction of a curved wall, whereby the inward tapering of the outer surface prevents the spacer from projecting outwardly from the wall which would otherwise arise in the absence of such tapering.

[0024] Preferably, in one form of junction spacer said web portion forms part of said reinforcement member retaining means, being contiguously disposed between said edge members of said one spacer means in generally coplanar relationship therewith and being biased towards one side thereof having: (i) an outer surface of approximate complementary shape to said profile of said circumferential edge of a said block, whereby the profile of said outer surface is substantially convex to repose between the said outer cusps of a pair of rectilinearly aligned said end faces of adjacent said blocks, and (ii) an inner recessed surface to engage and connect said interstitial junction spacer to said reinforcement member and accommodate said reinforcement member within an interstice of a pair of abutting said blocks spaced apart by said one spacer means.

[0025] Preferably, in another form of junction spacer,

the other spacer means is formed with a pair of opposing transverse grooves at the junction with the one spacer means, the longitudinal extent of each said groove being respectively disposed in parallel alignment with each edge member of said one spacer means, said grooves being sized and shaped for retainedly accommodating the opposing edges of the elongate reinforcement member.

[0026] Preferably, in said other form of spacer, the spacer is for spacing an end interstitial junction, wherein the one spacer means projects from said other spacer means on only one side of the spacer, the opposing side of the spacer being planar to engage a planar surface confronting the end of the block.

[0027] Preferably, in said other form of spacer, the web portion is provided with one or more holes to facilitate fixing the spacer to the confronting planar surface.

[0028] Preferably, in said other form of spacer, said web portion is provided with a central aperture, through which said elongate reinforcement member may extend.

[0029] Preferably, in said one form of junction spacer, the spacer is for an intermediate interstitial junction, whereby said interconnecting web portion is formed with a central longitudinal groove along its outer surface for accommodating a central inner cusp formed intermediate the opposing sides of each end face of a pair of adjacent blocks which are rectilinearly aligned, the inner cusp of each block extending continuously along the circumferential edge of each block.

[0030] Preferably, in said one form of intermediate spacer, the spacer is provided with a plurality of outwardly projecting spacer tabs disposed along the outer surface of the interconnecting web portion at the junction of the web portion with said one spacer means, said spacer tabs being angularly disposed to project marginally inwardly from each of said edge members for engaging the concave surface of an end face of an adjacent block to facilitate positioning the spacer within the confines of the end face of the block.

[0031] Preferably, in said one form of intermediate spacer, the spacer includes a plurality of opposing spacer tabs projecting outwardly from each of said edge members of said one spacer means proximate to the junction between the edge members and the interconnecting web portion adjacent to the inner recess surface of said web portion, said opposing spacer tabs being angularly disposed to project marginally inwardly from each of said edge members of engaging the concave surface of an end face of the adjacent block and for partly retaining the reinforcement member therein.

[0032] Preferably, in said one form of intermediate spacer, the spacer includes a pair of retention tabs, one disposed along each inner edge of edge members of said other spacer means proximate to the junction with the inner edge of the corresponding edge members of said one spacer means, said retention tabs projecting marginally inwardly over said inner recessed sur-

face of said web portion to define an overhanging surface substantially parallel with said inner recessed surface for retaining the reinforcement member in position.

[0033] In accordance with another aspect of the present invention, there is provided a reinforcing interstitial spacer system for positioning and supporting a plurality of blocks in a rectangular matrix for a wall construction, the blocks being of the type having two parallel rectangular side faces and four adjoining end faces orthogonally adjoining the corresponding edges of the side faces and the ends of each other contiguously to form a continuous circumferential edge of the block, the profile of the circumferential edge being substantially concave, whereby the corresponding edges of the side faces define an outer cusp along the opposing sides of each said end face; said system comprising:

an elongate, substantially planar reinforcement member having a pair of opposing expansive sides; and

a plurality of interstitial junction spacers for positioning and supporting said blocks in spaced relationship to each other at the interstitial junctions between said blocks, a said interstitial junction spacer being of the form defined in the preceding aspects of the invention.

[0034] In accordance with a further aspect of the present invention there is provided a block wall construction system comprising:

a plurality of blocks of the type having two parallel rectangular side faces and four adjoining end faces orthogonally adjoining the corresponding edges of the side faces and the ends of each other contiguously to form a continuous circumferential edge of the block, the profile of the circumferential edge being substantially concave, whereby the corresponding edge of the side faces define an outer cusp along the opposing sides of each said end face;

a reinforcing interstitial spacer being of the form defined in the preceding aspects of the invention; and

a binder for filling the outer spaces of the interstices of said matrix formed by said blocks and said reinforcing interstitial spacer system to bind the same together and form a stable wall construction.

[0035] Preferably, said binder is a silicone caulking material.

BRIEF DESCRIPTION OF DRAWINGS

[0036] The invention will be better understood in the light of the following description of one principal and specific embodiment thereof. The description is made with

reference to accompanying drawings, wherein

Figure 1 is a perspective view of a glass block of the standard type;

Figure 2 is a cross sectional view of the end face profile of the block shown in figure 1 of the drawings; Figure 3 is a top perspective view of an intermediate junction spacer;

Figure 4 is an underside view of figure 3;

Figure 5 is a top perspective view of an end junction spacer;

Figure 6 is an underside view of figure 5.

Figure 7 is fragmentary perspective view of the reinforcement member;

Figure 8 is an end view of figure 7;

Figure 9 is a perspective view showing both an intermediate junction spacer and an end junction spacer connected to the reinforcement member;

Figure 10 is an underside view of figure 9;

Figure 11 shows the composite reinforcement and spacer system of figures 9 and 10 positioned upon two adjacent blocks, one of which is disposed at the end of the wall;

Figure 12 is a similar view to figure 11 but showing the positioning of blocks on top of the composite arrangement;

Figure 13 is a fragmentary sectional view showing the positioning of the reinforcing interstitial spacer system between a pair of adjacent glass blocks; and

Figure 14 is a perspective fragmentary view showing a block wall under construction.

BEST MODE FOR CARRYING OUT THE INVENTION

[0037] The embodiment is directed towards a glass block wall construction system which involves the erection of a plurality of glass blocks to construct a wall using a reinforcing interstitial spacer system and a binder. The interstitial spacer system comprises the use of a series of elongated reinforcement members and a plurality of interstitial junction spacers. The binder is in the form of silicone caulking material or similar which is suitable for binding glass blocks together.

[0038] As shown in figures 1 and 2, a typical glass block 11 which is used in the present embodiment comprises two parallel rectangular side faces 13 and four adjoining end faces 15. The end faces 15 adjoin the corresponding edges 17 of both of the side faces 13 of the block, and furthermore adjoin the ends 19 of each other, contiguously, to form a continuous circumferential edge 21 around the block.

[0039] The profile of the circumferential edge 21 is more clearly shown in figure 2 of the drawings and generally comprises an inner substantially concave portion 21a, a pair of outer cusps 21b and a central inner cusp 21c. The outer extremities of the outer cusps 21b are defined by the corresponding edges 17 of each of the side faces 13 and form a planar land along the opposing

sides of each end face 15, substantially orthogonal to the outer surface of the side faces 13. The central inner cusp 21c is formed intermediate the outer cusps 21b and extends continuously along the circumferential edge 21 of the block, dividing the concave portion 21a of each end face 15 into two.

[0040] This complex profile results from the method of construction of a glass block, whereby the block is actually formed from two rectangular shells which are disposed so that the open ends thereof confront each other and are welded together, the inner cusp constituting the weld seam between the adjoining edges of the two shells.

[0041] This profile over the range of glass blocks of different manufacture is generally the same, variations generally only occurring with respect to the degree of concavity of the concave portions 21a and the width of the inner cusp 21c. Apart from these variations, however, the profile of glass blocks is generally uniform throughout the industry, whereby the outer cusps 21b are generally always marginally higher than the inner cusp 21c, and are formed with a flat land.

[0042] The elongated reinforcement member 23 which is used in the present embodiment is shown in figures 7 and 8 of the drawings and essentially comprises a metal bar of aluminium or similar material. The bar is specially formed to adopt a cross-sectional shape which is substantially similar to the cross-sectional shape of the cavity or void formed between a pair of adjacent glass blocks, marginally spaced apart as best shown in figure 13 of the drawings.

[0043] Moreover, the reinforcement member 23 is of a flattened shape comprising a pair of thickened wings 25 which are interconnected by a central web 27. The web 27 is of thinner dimension than the wings 25, forming an elongated groove to be disposed within the space provided between a pair of confronting inner cusps 21c of a pair of adjacent blocks, accommodating the cusps. The wings 25 are generally convexly shaped to complement the shape of the concave portion 21a of a glass block on which the member reposes. The transverse extent of the member is commensurate to the distance between the outer cusps 21b so that the outer edges 25a of the member repose proximate to the junction between the outer cusps 21b and the respective concave portions 21a. Thus, the elongated reinforcement member essentially has a pair of opposing expansive sides 23a and 23b which are substantially complementary in shape to that portion of the end face 15 of a block which extends between the outer cusps thereof.

[0044] Although the profile of each expansive side is substantially convex to repose between the outer cusps and the web portion 27 defines a central groove to accommodate the inner cusp, the size of the member is marginally smaller than the resultant size of the cavity or void between the blocks to allow for expansion and contraction of the glass blocks with changes in temperature. This marginal difference in size is achieved by the

arrangement of the interstitial junction spacers therewith, which now will be described.

[0045] The interstitial junction spacers are formed of polypropylene plastic material and are in two forms, one form being an intermediate junction spacer which is disposed at each internal junction of the matrix of glass blocks forming the wall, and the other form being an end junction spacer which is disposed at the end junctions between the glass blocks running along the sill and the jambs of the frame or surround within which the wall is constructed.

[0046] The intermediate junction spacer 31 as shown in figures 3 and 4, essentially comprises a pair of intersecting spacer means which are integral with each other. Each spacer means has a pair of coplanar edge members 33 or 34 so that one pair of edge members 33 are formed as part of one spacer means and the other pair of edge members 34 are formed as part of the other spacer means. The intersection of the spacer means results in the edge members forming a cross as shown in the drawings, at each side of the spacer. The thickness of each edge member 33 and 34 is the same, in the present embodiment being 3mm. This thickness corresponds to the spacing required and achieved between the opposing edges 17 of adjacent blocks 11 in the manner that will be described in more detail later.

[0047] The one spacer means comprising the edge members 33 is formed with an interconnecting web portion 35 extending between the two edge members 33. The web portion 35 is biased towards one side of the spacer means, its outer surface 35a being contiguous with corresponding outer surfaces 33a of the edge members 33, which are in themselves coplanar with respect to each other.

[0048] The outer surface 35a of the web portion 35 is substantially complementary in shape to the confronting surface of the end face 15 of an adjacent glass block 11. Thus, the outer surface 35a is generally convex complementing the shape of the concave portions 23a of the end face of the block and being formed with a central elongate groove 37 to accommodate the inner cusp 23c of the same block.

[0049] A plurality of outwardly projecting spacer tabs 39 are disposed at the junction between the outer surface 35a of the web portion 35 and the corresponding outer surface 33a of the edge members 33 of the one spacer means. These spacer tabs 39 are disposed one at each side of the edge members 34 of the other spacer means and project marginally inwardly to define an acute angle with the outer surface 35a of the web portion. Importantly, the spacer tabs are sufficiently flexible and resilient by virtue of the inherent nature of the polypropylene material of which they are formed to take up any variance between the complementary shape of the outer surface of the web portion 35 and the concave portion 23a of an adjacent block.

[0050] The inner surface 35b of the web portion 35 is recessed and is essentially of complementary shape to

an expansive side 23a or 23b of the reinforcement member 23 so that the spacer 31 can engage and connect to the reinforcement member. Thus the recess is terminated along its sides by opposing inner edges 33b of the edge members 33 substantially orthogonal to the corresponding outer surfaces 33a, so that the outer edges 25a of the reinforcement member 23 may situate proximate thereto.

[0051] A plurality of outwardly projecting opposing spacer tabs 41 are angularly disposed along the inner edge 33b of each of the edge members 33 at their respective junction with the opposite outer surface 33c to the corresponding outer surface 33a. These opposing spacer tabs 41 project marginally angularly inwardly over the inner recessed surface 35b of the web portion 35, so as to define an obtuse angle with the adjacent opposite outer surface 33c of the respective edge members. The opposing spacer tabs 41 are disposed one to each side of the other edge member 34 and function not only to take up any variance between the complementary shape of the exposed expansive side of the reinforcement member 23, when disposed within the confines of the inner recessed surface 35b of the web portion, and the confronting concave portion 23a of an adjacent block, but also to partly retain the reinforcement member in this confined position.

[0052] A pair of retention tabs 42 are provided one along each inner edge of the edge members 34 proximate to the junction with the inner edge 33b of the corresponding edge member 33. The retention tabs 42 have an outer tapered surface to allow the outer edges of the reinforcement member 23 to slide therealong when positioning the same, and an overhanging surface substantially parallel to the inner surface 35a of the web portion to retain the reinforcement in position once it engages the recess beneath the overhanging surface. Accordingly, the retention tabs 42 constitute the principal means by which the reinforcement member 23 is retained within the confines of the inner recessed surface 35b of the web portion 35.

[0053] Again, both the opposing spacer tabs 41 and the retention tabs 42 are sufficiently resilient to allow for the reinforcement member to be clicked into place within the inner recess where it is retained in position.

[0054] The edge members 34 of the other spacer means are tapered from each proximal end thereof adjoining the edge members 33 of the one spacer means, to the distal ends thereof. This tapering is provided to enable the spacer 31 to be used when constructing a curved wall, whereby the one spacer means will be disposed vertically and the other spacer means disposed horizontally. In this way, the tapering of the edge members 34 takes up the curvature of the horizontal joints, which curvature is achieved by adjacent blocks being marginally angularly offset to each other about a vertical axis. Accordingly, the outer surface 34a of the edge members 34 will not project beyond the joint which would otherwise occur if the outer surface was not so

tapered.

[0055] The end junction spacer 43 is shown in figures 5 and 6 of the drawings and in principle is similar to the intermediate junction spacer 31 but includes some significant differences.

[0056] As with the intermediate junction spacer, the end junction spacer 43 comprises a pair of intersecting spacer means which are integrally formed, each comprising a pair of coplanar edge members 45 and 47, the edge members 45 forming part of one of the spacer means and the edge members 47 forming part of the other spacer means.

[0057] As opposed to the intermediate junction spacer, the edge members 45 project from the other spacer means in only one direction, the opposing side 43a of the other spacer means being planar, as shown in figure 6 of the drawings, to facilitate engagement and affixment of the end junction spacer 43 to a planar surface which confronts the appropriate end of the block wall.

[0058] The other spacer means is also provided with an interconnecting web portion 49, however, as opposed to the intermediate junction spacer, the web portion 49 is formed with a central aperture 51 extending between the edge members 47, so that the web portion is effectively divided into two parts 49a and 49b, respectively interconnecting the edge members 47 at their opposing ends.

[0059] The web portion 49 is provided with a pair of holes 53 which are centrally disposed intermediate the edge members 47, one on each part 49a and 49b of the web portion. These holes 53 are provided to enable the junction spacer to be affixed to the confronting planar surface of the wall frame or the like.

[0060] Both parts 49a and 49b of the web portion are each provided with a longitudinal rail 55 which similarly extends between the edge members 47 for strengthening purposes. In addition, the web portion 49 includes an end flange 57 disposed at either end thereof to project laterally from the side of each edge member 47. Accordingly, the extent of the spacer 43 between the end flanges 57 is commensurate to the distance between the opposing sides of the frame member 29 within which the corresponding end row of glass blocks will repose, in a manner which will be described in more detail later.

[0061] The edge members 47 of the other spacer means are formed with a pair of opposing transverse grooves 59 which are disposed at the junction with the edge members 45 of the one spacer means. The longitudinal extent of each of the grooves 59 is respectively disposed in parallel alignment with each edge member 45 along the inner side of the edge members 47. The grooves 59 are particularly sized and shaped to retainedly accommodate the opposing edges 25a of the elongate reinforcement member 23, as best shown in figures 9 and 10 of the drawings. Accordingly, the end junction spacer 43 is fitted onto the end of a reinforcement member 25 whereby the reinforcement member may project

through the central aperture 51 of the web portion 49 if necessary with the edge members 45 being disposed and projecting outwardly from the outer edges 25a of the member to still provide the requisite spacing between adjacent blocks which are situated on either side of the edge members 45.

[0062] The edge members 47 still provide a spacing function, but instead of them defining the spacing between adjacent glass blocks, as is the case with both spacer means of the intermediate junction spacer, they define the spacing between the outer face of the end blocks and the wall frame or surround confronting the ends of the glass block.

[0063] Having now described each of the components of the construction system, the method of constructing a glass block wall using the system will now be described.

[0064] As previously mentioned, the glass blocks 11 are laid within a rectangular frame 29, as best shown in figure 14 of the drawings.

[0065] Although the present embodiment describes the use of a rectangular frame 29, the invention is not so limited and accordingly, finds equal utility where a glass block wall is desired to be constructed directly within a window or wall surround or the like, whereby the rectangular frame 29 is dispensed within entirely and the glass blocks are required to abut directly to the brickwork or other member forming the surround.

[0066] In the latter case, as previously described, the end junction spacers 43 may be affixed directly to the outer surface of the confronting brickwork or the like by the use of fixing screws which are mounted through the holes 53 to securely position the end junction spacer and to provide a guide for the subsequent positioning of the blocks.

[0067] Returning to the principal embodiment, however, the frame 29 is used and essentially comprises a head member, (not shown) which is disposed along the top of the glass wall to be constructed, a sill member 29a which is disposed along the bottom of the glass wall to be constructed, and a pair of jambs 29b which are disposed at either end of the glass wall to be constructed to define its sides. The frame effectively forms a U-shaped channel and the distance between the opposing jambs and the opposing head and sill members is predetermined to allow for the exact number of glass blocks to form a rectangular matrix within the frame 29, taking into account the prescribed spacing therebetween, which in the present embodiment is 3mm.

[0068] To commence the construction, a strip of polystyrene foam 61 conforming to the spacing between the sides of the frame 29 is disposed within the channel members of each jamb member 29b.

[0069] Next, one of the end junction spacers 23 is taken and modified to form a corner spacer. In this respect, the other spacer means has one end of it removed, by simply sawing through it with a hacksaw or the like. More particularly, the edge members 47 are transversely cut

a prescribed distance from the junction with the edge members 45 removing one of the interconnecting web portion 49 from the spacer. Consequently, the modified spacer will have a pair of shortened legs formed by the remainder of the edge members 47 at one side of the other spacing member, of a length commensurate to the height of the edge members 47. This modified spacer is then disposed within the corner of the frame so that the planar side 43a of the spacer sits upon the inner web of the sill member 29a and the shortened legs of the other spacer means abut up against the outer surface of the polystyrene 61 on the jamb member 29b. As previously described, the distance between the end flanges 57 is commensurate to the distance between the sides of the frame, and consequently, the modified spacer will sit precisely within the confines of the channel of the sill.

[0070] After positioning the modified end spacer, a complete end junction spacer 43 is similarly disposed along the web of the sill, a distance approximating the size of one side of a glass block. At this position, the edge members 45 will project upwardly and the edge members 47 will extend in parallel relationship with the sides of the sill to provide a base on which the outer cusps of the glass block may repose.

[0071] A glass block is then positioned so that the respective edge members 45 and 47 support the block along its corresponding outer cusps 23b at each corner of the block.

[0072] It should be noted that the edge members 47 are of greater height and hence thickness than the edge members 45 due to the increased loading of the block thereon, and the need to space the bottom of the block from the inner web of the sill at a distance greater than the 3mm adopted for the remaining spacing.

[0073] Further end junction spacers are subsequently positioned and glass blocks in turn positioned upon them along the bottom of the sill, the spacing of the vertical interstices between the blocks being determined by the edge members 45.

[0074] It should be noted that the distance between the outer sides of the opposing edge members 45 and 47 is marginally less than the transverse extent of a block, but greater than the overall concave extent of the end face of the block, so that the end members can support the block adequately along its outer cusps. Thus, a sufficient recess is provided along the joint where the spacers are disposed to allow for the silicone binder to be caulked into the recess in the known manner.

[0075] After the first row of glass blocks are laid, and in this respect a modified end junction spacer is fitted into the corner of the sill and the other jamb in the same manner as the first corner, the principal part of the reinforcing interstitial spacer system is then constructed and positioned. Moreover, a prescribed length of reinforcement member 23 is obtained, end junction spacers are fitted onto either end in a manner previously described and intermediate junction spacers are clipped into place at prescribed locations along the bar corresponding to

the location of the vertical joints. Thus, the unit as shown in part in figures 9 and 10 is assembled and positioned along the top of the glass blocks 11 so that the planar surface 43a of the end junction spacers engage the respective strips of polystyrene 61 and the edge members 47 are slid along the outer cusps of the end glass blocks, at the same time as the edge members 34 of the intermediate junction spacers are aligned and positioned between the confronting vertical outer cusps of adjacent blocks to provide the spacing for the vertical joints.

[0076] As previously described, the complementary shape of the spacers and the reinforcement member allow the assembled unit to position itself along the composite upper circumferential edge formed by the glass blocks, supporting and in turn accurately positioning the glass blocks themselves to allow the next row of blocks to be laid thereon.

[0077] The next row of glass blocks is laid by simply inserting one block at a time between the exposed upwardly projecting edge members 34 of the intermediate junction spacers and the upwardly projecting edge members 47 of the end junction spacers 43 of the positioned unit. This method is then repeated for subsequent rows until the top row is laid, whereby the sequence needs to be modified by making the last glass block to be erected, one of the blocks intermediate the corner blocks. In addition, positioning spacers and the reinforcement member along the very top of the top row is dispensed with to facilitate locating the glass blocks within the head of the frame.

[0078] Once the matrix of glass blocks is complete, the silicone binder can be inserted by caulking along the grooves formed by the spacing between the blocks which results from the positioning of the various spacers.

[0079] After the silicone binder is set, a glass block wall construction is achieved having superior loading characteristics than is able to be achieved with the use of prior art construction systems, as a result of reinforcing and support being provided in the vertical as well as the horizontal interstices of the matrix of blocks.

[0080] Although the preceding embodiment describes a glass block wall construction system wherein the reinforcement members are essentially disposed along the horizontal joints, these members may equally be disposed along the vertical joints and achieve similar superior loading characteristics.

[0081] Furthermore, the spacers have utility not only in the construction of planar faced walls, but also can be used in the construction of curved walls. In curved walls, the reinforcement members will be disposed within the vertical joints so that with respect to the intermediate junction spacers, these will be disposed with the one spacer means thereof extending vertically to accommodate the reinforcement members and the other spacer means disposed horizontally. In this manner, the tapered outer surface 34a of each edge member 34, and in the case of the edge junction spacers, the edge mem-

bers 45, enable a block to be marginally offset angularly to achieve the curvature, without the outer surface of the edge members projecting outwardly beyond the confines of the joint.

[0082] It should be appreciated that the scope of the present invention is not limited to the particular embodiment and variations thereof described herein. Indeed, variations to the method of laying the glass blocks and variations in the nature of the components used in the construction system may be envisaged in accordance with particular applications differing from that described in the embodiment, without departing from the spirit of the invention. For example, an intermediate junction spacer can be conceived using some of the features of the end junction spacer described, whereby the interconnecting web portion is provided with a central aperture through which a reinforcement member may pass, the web being substantially orthogonal to the reinforcement member.

Claims

1. An interstitial junction spacer (31, 43) for positioning and supporting a plurality of blocks (11) in a matrix for a wall construction, said blocks (11) being of the type having two parallel rectangular side faces (13) and four adjoining end faces (15) orthogonally adjoining the corresponding edges (17) of the side faces (13) and the ends (19) of each other contiguously to form a continuous circumferential edge (21) of the block (11), the profile of the circumferential edge (21) being substantially concave, whereby the corresponding edges (17) of the side faces (13) define an outer cusp (21b) along the opposing sides of each said end face (15); said spacer (31) comprising:

one spacer means having a pair of coplanar edge members (33, 47) of a prescribed thickness to space said one said end face (15) from a confronting end face (15) of another said block (11) or a surface disposed in abutting relationship adjacent to said one said block (11); and

an interconnecting web portion (35, 49) disposed between said edge members (33, 47) of said one spacer means to integrally interconnect said edge members (33, 47) together;

characterised by:

- (i) another spacer means having a further pair of coplanar edge members (34, 45) of a prescribed thickness disposed in intersecting relationship with said pair of coplanar edge members (33, 47) to be integral therewith;

(ii) said pair of coplanar edge members (33, 47) and said further pair of coplanar edge members (34, 45) being spaced apart a distance commensurate to the spacing of a pair of corresponding said outer cusps (21b) of said blocks (11) so that said one spacer means may be reposed in juxtaposition with the outer cusps (21b) of the circumferential edge (21) of one said block (11) along one said end face (15) of said one said block (11), and said other spacer means may be reposed in juxtaposition with the outer cusps (21b) of the circumferential edge (21) of said one block (11) along an orthogonally adjacent said end face (15) to said one end face of said one said block, to space said orthogonally adjacent end face (15) from a confronting end face (15) of another said block (11) or a surface disposed in abutting relationship adjacent to said one said block; and

(iii) said one spacer means or said other spacer means is formed with reinforcement member retaining means between said edge members (33, 47) of said one spacer means or between said further pair of coplanar edge members (34, 45) respectively, to accommodate and retainably dispose an elongate, substantially planar reinforcement member (23) in coplanar relationship with said edge members (33, 47) and in orthogonal relationship with said other spacer means, or vice versa, respectively.

2. An interstitial junction spacer (31, 43) as claimed in claim 1, further **characterised in that** an outer surface (34a) of each said edge member (34, 45) of said one or said other spacer means is tapered inwardly, from a proximal end of said each said edge member (34, 45) to a distal end thereof.
3. An interstitial junction spacer (31, 43) as claimed in claim 1 or 2, further **characterised in that** said web portion (35, 49) forms part of said reinforcement member retaining means, being contiguously disposed between said edge members (33, 47) of said one spacer means in generally coplanar relationship therewith and being biased towards one side thereof having: (i) an outer surface (35a) of approximate complementary shape to said profile of said circumferential edge (21) of a said block (11), whereby the profile of said outer surface (35a) is substantially convex to repose between the said outer cusps (21b) of a pair of rectilinearly aligned said end faces (15) of adjacent said blocks, and (ii) an inner recessed surface (35b) to engage and connect said interstitial junction spacer (31, 43) to said reinforcement member (23) and accommodate said reinforcement member (23) within an interstice of a pair of abutting said blocks (11) spaced apart by

said one spacer means.

4. An interstitial junction spacer (31) as claimed in claim 3 for spacing an intermediate interstitial junction within a rectangular matrix of said blocks (11), each said block (11) including a central inner cusp (21c) disposed intermediate said outer cusps (21b) of each said end face (15) thereof, said inner cusp (21c) extending continuously along said circumferential edge (21) of said block, further **characterised in that** said interconnecting web portion (35) is formed with a central longitudinal groove (37) along said outer surface (35a) for accommodating a pair of rectilinearly aligned said inner cusps (21c) of a pair of adjacent said blocks (11) in said rectangular matrix.
5. An interstitial junction spacer (31) as claimed in any one of claims 1 to 4 for spacing an intermediate interstitial junction within a rectangular matrix of said blocks (11), further **characterised by** a plurality of outwardly projecting spacer tabs (39) disposed along said outer surface (35a) of said interconnecting web portion (35) at the opposing junctions between said web portion (35) and said edge members (33) of said one spacer means, said spacer tabs (39) being angularly disposed to project marginally inwardly from each of said edge members (33) for engaging the concave surface (21a) of a said end face (15) of an adjacent said block (11) to facilitate positioning said interstitial junction spacer (31) within the confines of said end face (15) of said adjacent said block.
6. An interstitial junction spacer (31) as claimed in any one of claims 1 to 5, for spacing an intermediate interstitial junction within a rectangular matrix of said blocks (11), further **characterised by** a plurality of opposing spacer tabs (41) projecting outwardly from each of said edge members (33) of said one spacer means proximate to the opposing junctions between said edge members (33) and said interconnecting web portion (35) adjacent to said inner recessed surface of said web portion (35b), said opposing spacer tabs (41) being angularly disposed to project marginally inwardly from each of said edge members (33) for engaging the concave surface (21a) of an end face (15) of an adjacent said block (11) and for partly retaining said reinforcement member (23) therein.
7. An interstitial junction spacer (31) as claimed in any one of claims 1 to 6, for spacing an intermediate interstitial junction within a rectangular matrix of said blocks (11), further **characterised by** a pair of retention tabs (42) also forming part of said reinforcement member retaining means, one of said retention tabs being disposed along each inner

edge of said further edge members (34) of said other spacer means proximate to the junction with the inner edge (33b) of the corresponding said edge members (33) of said one spacer means, said retention tabs (42) projecting marginally inwardly over said inner recessed surface (35b) of said web portion (35) to define an overhanging surface substantially parallel with said inner recessed surface (35b) for retaining said reinforcement member (23) in position.

8. An interstitial junction spacer (31) as claimed in claim 7, further **characterised in that** said retention tabs (42) each have an outer tapered surface extending along said inner edge of said further edge member (34) thereof to said overhanging surface to facilitate locating said reinforcement member within the inner recessed surface.

9. An interstitial junction spacer (31) as claimed in any one of claims 5 to 8, further **characterised in that** said spacer tabs (39) are formed of resilient, flexible material.

10. An interstitial junction spacer (31) as claimed in any one of claims 6 to 9, further **characterised in that** said opposing spacer tabs (41) are formed of resilient, flexible material.

11. An interstitial junction spacer (31) as claimed in any one of claims 7 to 10, further **characterised in that** said retention tabs (42) are formed of resilient, flexible material.

12. An interstitial junction spacer (31, 43) as claimed in any one of claims 1 to 11, further **characterised in that** said inner recessed surface (35b) is of substantially complementary shape to an expansive side (23a, 23b) of said reinforcement member (23), whereby the opposing inner edges (33b) of said inner recessed surface (35b) are defined by the inner edges (33b) of the opposing said edge members (33, 47) of said one spacer means to engage the opposing longitudinally extending edges (25a) of said reinforcement member (23).

13. An interstitial junction spacer (43) as claimed in claim 1 or 2, further **characterised in that** said other spacer means is formed with a pair of opposing transverse grooves (59) at the junction with said one spacer means, the longitudinal extent of each said groove being respectively disposed in parallel alignment with each said edge member (45) of said one spacer means, said grooves (59) being sized and shaped for retainedly accommodating the opposing longitudinally extending edges (25a) of said reinforcement member (23).

14. An interstitial junction spacer (43) as claimed in claim 13, for spacing an end interstitial junction at the end of a rectangular matrix of said blocks (11), further **characterised in that** said one said spacer means projects from said other said spacer means on only one side of said interstitial junction spacer (43), the opposing side (43a) of said interstitial junction spacer (43) being planar to engage a planar surface confronting said end of said rectangular matrix of said blocks.

15. An interstitial junction spacer (43) as claimed in claim 13 or 14, for spacing an end interstitial junction at the end of a rectangular matrix of said blocks (11), further **characterised in that** said web portion (49) is provided with one or more holes (53) to facilitate fixing said interstitial junction spacer (43) to a planar surface confronting said end of said rectangular matrix of said blocks (11).

16. An interstitial junction spacer (43) as claimed in any one of claims 13 to 15, further **characterised in that** said web portion (49) is provided with a central aperture (51), through which said reinforcement member (23) may extend.

17. An interstitial junction spacer (43) as claimed in claim 16, further **characterised in that** said web portion (49) is divided into two parts (49a, 49b) respectively interconnecting said edge members (47) of said other spacer means, each part (49a, 49b) being formed with an upstanding longitudinal rail (55) extending between said edge members (47) of said other spacer means.

18. An interstitial junction spacer (43) as claimed in claim 16 or 17, further **characterised in that** said web portion (49) includes an end flange (57) disposed at either end thereof to project laterally from the side of each said edge member (47) of said other spacer means.

19. A reinforcing interstitial spacer system for positioning and supporting a plurality of blocks (11) in a rectangular matrix for a wall construction, the blocks (11) being of the type having two parallel rectangular side faces (13) and four adjoining end faces (15) orthogonally adjoining the corresponding edges (17) of the side faces (13) and the ends (19) of each other contiguously to form a continuous circumferential edge (21) of the block (11), the profile of the circumferential edge (21) being substantially concave, whereby the corresponding edges (17) of the side faces (13) define an outer cusp (21b) along the opposing sides of each said end face (15); said system **characterised by:-**

an elongate, substantially planar reinforcement

member (23) having a pair of opposing expansive sides (23a, 23b); and

a plurality of interstitial junction spacers (31, 43) for positioning and supporting said blocks (11) in spaced relationship to each other at the interstitial junctions between said blocks (11), a said interstitial junction spacer (31, 43) being of the form as claimed in any one of claims 1 to 18.

20. A reinforcing interstitial spacer system as claimed in claim 19, further **characterised in that** said reinforcement member (23) is of a flattened shape, each end (2) comprising a thickened wing (25) interconnected by a central web (27), said central web (27) being of a thinner dimension than said wings (25) to form an elongated groove.

21. A block wall construction system **characterised by:-**

a plurality of blocks (11) of the type having two parallel rectangular side faces (13) and four adjoining end faces (15) orthogonally adjoining the corresponding edges (17) of the side faces (13) and the ends (19) of each other contiguously to form a continuous circumferential edge (21) of the block (11), the profile of the circumferential edge (21) being substantially concave, whereby the corresponding edge (17) of the side faces (13) define an outer cusp (21b) along the opposing sides of each said end face (15);

a reinforcing interstitial spacer system as claimed in any one of claims 19 to 20; and

a binder for filling the outer spaces of the interstices of said matrix formed by said blocks (11) and said reinforcing interstitial spacer system to bind the same together and form a stable wall construction.

22. A block wall construction system as claimed in claim 21, further **characterised in that** said binder is a silicone caulking material.

Patentansprüche

1. Abstandshalter für Zwischenfugen (31, 43) zur Positionierung und Unterstützung mehrerer Bausteine (11) in einer Matrix einer Wandkonstruktion, wobei die Bausteine (11) derart sind, dass sie zwei parallele, rechteckige Seitenflächen (13) und vier aneinander angrenzende Endflächen (15) aufweisen, die orthogonal und unter Berührung an die entsprechenden Kanten (17) der Seitenflächen (13) und ihre Enden (19) angrenzen und so einen ununterbro-

chenen Umfangsrand (21) des Bausteins (11) bilden, wobei das Profil des Umfangsrandes (21) im Wesentlichen konkav ist, wobei die entsprechenden Kanten (17) der Seitenflächen (13) eine äußere Spitze (21b) entlang den gegenüberliegenden Seiten jeder Endfläche (15) festlegen, wobei der Abstandshalter (31)

eine erste Abstandshalteeinrichtung mit einem Paar koplanarer Randglieder (33, 47) einer vorbestimmten Dicke zum Beabstanden einer der Endflächen (15) und einer gegenüberliegenden Endfläche eines weiteren Bausteins (11) oder einer Oberfläche, die in einer anstoßenden Anordnung neben diesem ersten Baustein (11) angeordnet ist; und einen Verbindungsstegabschnitt (35, 49) umfasst, der zwischen den Randgliedern (33, 47) der ersten Abstandshalteeinrichtung ausgebildet ist und die Randglieder (33, 47) zu einer Einheit verbindet; **dadurch gekennzeichnet, dass**

(i) eine zweite Abstandshalteeinrichtung mit einem weiteren Paar koplanarer Randglieder (34, 45) einer vorbestimmten Dicke in einer schneidenden Anordnung zu dem Paar koplanarer Randglieder (33, 47) vorgesehen ist, wobei diese eine Einheit bilden;

(ii) zwischen dem Paar koplanarer Randglieder (33, 47) und dem weiteren Paar koplanarer Randglieder (34, 45) ein Zwischenraum mit einem Abstand ausgebildet ist, der dem Zwischenraum eines Paares korrespondierender äußerer Spitzen (21b) der Bausteine (11) entspricht, so dass eine Abstandshalteeinrichtung neben den äußeren Spitzen (21b) des Umfangsrandes (21) des ersten Bausteins (11) entlang einer Endfläche (15) dieses ersten Bausteins (11) angelegt werden kann und die zweite Abstandshalteeinrichtung neben den äußeren Spitzen (21b) des Umfangsrandes (21) des ersten Bausteins (11) entlang einer benachbarten Endfläche (15) orthogonal zur ersten Endfläche des ersten Bausteins angelegt werden kann, um einen Zwischenraum zwischen der orthogonal benachbarten Endfläche (15) und einer gegenüberliegenden Endfläche (15) eines zweiten Bausteins (11) oder einer Oberfläche, die in einer anstoßenden Anordnung neben diesem ersten Baustein (11) angeordnet ist, auszubilden; und

(iii) die erste Abstandshalteeinrichtung oder die zweite Abstandshalteeinrichtung mit einer Befestigungseinrichtung für ein Verstärkungsglied zwischen den Randgliedern (33, 47) der ersten Abstandshalteeinrichtung bzw. zwischen dem weiteren Paar koplanarer Randglieder (34, 45) ausgebildet ist, um ein längliches im Wesentli-

chen planares Verstärkungsglied (23) aufzunehmen und zu befestigen, das in einer koplaren Anordnung zu den Randgliedern (33, 47) und in einer orthogonalen Anordnung zur zweiten Abstandshalteeinrichtung oder umgekehrt angeordnet ist.

2. Abstandshalter für Zwischenfugen (31, 43) nach Anspruch 1, weiterhin **dadurch gekennzeichnet, dass** eine Außenoberfläche (34a) jedes Randglieds (34, 45) der ersten oder der zweiten Abstandshalteeinrichtung von einem nahegelegenen Ende jedes der Randglieder (34, 45) zu dessen distalem Ende nach innen abfällt.
3. Abstandshalter für Zwischenfugen (31, 43) nach Anspruch 1 oder 2, weiterhin **dadurch gekennzeichnet, dass** der Stegabschnitt (35, 49) einen Teil der Befestigungseinrichtung für ein Verstärkungsglied bildet, wobei es berührend zwischen den Randgliedern (33, 47) der ersten Abstandshalteeinrichtung und im Allgemeinen in einer koplaren Anordnung zu dieser und zu einer Seite davon geneigt ausgebildet ist, umfassend: (i) eine Außenoberfläche (35a) mit einer Form, die ungefähr komplementär zu dem Profil des Umfangsrandes (21) des Bausteins ist, wobei das Profil der Außenoberfläche (35a) im Wesentlichen konvex ist und zwischen den äußeren Spitzen (21b) eines Paares geradlinig ausgerichteter Endflächen (15) benachbarter Bausteine zu liegen kommt, und (ii) eine tiefer liegende Innenoberfläche (35b), die in den Abstandshalter für Zwischenfugen (31, 43) am Verstärkungsglied (23) eingreift und diese verbindet und das Verstärkungsglied (23) innerhalb eines Zwischenraums zwischen einem Paar aneinander stoßender Bausteine (11), zwischen denen durch die erste Abstandshalteeinrichtung ein Zwischenraum geschaffen ist, anordnet.
4. Abstandshalter für Zwischenfugen (31) nach Anspruch 3 zur Schaffung eines Zwischenraums für eine dazwischenliegende Zwischenfuge innerhalb einer rechteckigen Matrix der Bausteine (11), wobei jeder Baustein (11) eine mittige innere Spitze (21c) aufweist, die zwischen den äußeren Spitzen (21b) jeder der Endflächen (15) angeordnet ist, wobei sich die innere Spitze ununterbrochen entlang dem Umfangsrand (21) des Bausteins erstreckt, weiterhin **dadurch gekennzeichnet, dass** der Verbindungsstegabschnitt (35) mit einer mittigen Längsnut (37) entlang der Außenoberfläche (35a) zur Aufnahme eines Paares geradlinig ausgerichteter innerer Spitzen (21c) eines Paares benachbarter Bausteine (11) der rechteckigen Matrix ausgebildet ist.
5. Abstandshalter für Zwischenfugen (31) nach einem der Ansprüche 1 bis 4 zur Schaffung eines Zwi-

schenraums für eine dazwischenliegende Zwischenfuge innerhalb einer rechteckigen Matrix der Bausteine (11), weiterhin **dadurch gekennzeichnet, dass** er mehrere nach außen weisende Abstandshalterzungen (39) aufweist, die entlang der Außenoberfläche (35a) des Verbindungsstegabschnitts (35) an den gegenüberliegenden Verbindungen zwischen dem Stegabschnitt (35) und den Randgliedern (33) der ersten Abstandshalteeinrichtung angeordnet sind, wobei die Abstandshalterzungen (39) in einem Winkel angeordnet sind, so dass sie geringfügig von jedem der Randglieder (33) nach innen weisen, um in die konkave Oberfläche (21a) der Endfläche (15) eines benachbarten Bausteins (11) einzugreifen und so die Positionierung des Abstandshalters für Zwischenfugen (31) innerhalb der Grenzen der Endfläche (15) des benachbarten Bausteins zu erleichtern.

6. Abstandshalter für Zwischenfugen (31) nach einem der Ansprüche 1 bis 5 zur Schaffung eines Zwischenraums für eine dazwischenliegende Zwischenfuge innerhalb einer rechteckigen Matrix der Bausteine (11), weiterhin **dadurch gekennzeichnet, dass** er mehrere gegenüberliegende Abstandshalterzungen (41) aufweist, die von jedem der Randglieder der ersten Abstandshalteeinrichtung nahe den gegenüberliegenden Verbindungen zwischen den Randgliedern (33) und dem Verbindungsstegabschnitt (35) neben der tiefer liegenden Innenoberfläche des Stegabschnitts (35b) nach außen weisen, wobei die gegenüberliegenden Abstandshalterzungen (41) in einem Winkel angeordnet sind, so dass sie geringfügig von jedem der Randglieder (33) nach innen weisen, um in die konkave Oberfläche (21a) der Endfläche (15) eines benachbarten Bausteins (11) einzugreifen und teilweise das Verstärkungsglied (23) darin zu halten.
7. Abstandshalter für Zwischenfugen (31) nach einem der Ansprüche 1 bis 6 zur Schaffung eines Zwischenraums für eine dazwischenliegende Zwischenfuge innerhalb einer rechteckigen Matrix der Bausteine (11), weiterhin **dadurch gekennzeichnet, dass** er ein Paar Haltezungen (42) aufweist, die ebenfalls Teil der Befestigungseinrichtung für ein Verstärkungsglied sind, wobei eine der Haltezungen entlang jeder Innenkante der weiteren Randglieder (34) der zweiten Abstandshalteeinrichtung nahe der Verbindung an der Innenkante (33b) des entsprechenden Randglieds (33) der ersten Abstandshalteeinrichtung angeordnet ist, wobei die Haltezungen (42) geringfügig nach innen und über die tiefer liegende Innenoberfläche (35b) des Stegabschnitts (35) weisen und eine überhängende Oberfläche im Wesentlichen parallel zur tiefer liegenden Innenoberfläche (35b) festlegen, um das Verstärkungsglied (23) in seiner Position zu

halten.

8. Abstandshalter für Zwischenfugen (31) nach Anspruch 7, weiterhin **dadurch gekennzeichnet, dass** die Haltezungen (42) jeweils eine sich geneigte Außenoberfläche aufweisen, die sich entlang der Innenkante des weiteren Randglieds (34) zur überhängenden Oberfläche erstreckt, um das Anordnen des Verstärkungsglieds innerhalb der tiefer liegenden Innenoberfläche zu erleichtern. 5 10
9. Abstandshalter für Zwischenfugen (31) nach einem der Ansprüche 5 bis 8, weiterhin **dadurch gekennzeichnet, dass** die Abstandshalterzungen (39) aus einem elastischen, flexiblen Material ausgebildet sind. 15
10. Abstandshalter für Zwischenfugen (31) nach einem der Ansprüche 6 bis 9, weiterhin **dadurch gekennzeichnet, dass** die gegenüberliegenden Abstandshalterzungen (41) aus einem elastischen, flexiblen Material ausgebildet sind. 20
11. Abstandshalter für Zwischenfugen (31) nach einem der Ansprüche 7 bis 10, weiterhin **dadurch gekennzeichnet, dass** die Haltezungen (42) aus einem elastischen, flexiblen Material ausgebildet sind. 25
12. Abstandshalter für Zwischenfugen (31, 43) nach einem der Ansprüche 1 bis 11, weiterhin **dadurch gekennzeichnet, dass** die tiefer liegende Innenoberfläche (35b) eine zu einer sich ausdehnenden Seite (23a, 23b) des Verstärkungsglieds (23) im Wesentlichen komplementäre Form hat, wobei die gegenüberliegenden Innenkanten (33b) der tiefer liegenden Innenoberfläche (35b) durch die Innenkanten (33b) der gegenüberliegenden Randglieder (33, 47) der ersten Abstandshalteeinrichtung festgelegt sind und in die gegenüberliegenden sich nach außen erstreckenden Längsränder (25a) des Verstärkungsglieds (23) eingreifen. 30 35 40
13. Abstandshalter für Zwischenfugen (43) nach Anspruch 1 oder 2, weiterhin **dadurch gekennzeichnet, dass** die zweite Abstandshalteeinrichtung mit einem Paar gegenüberliegender transversal verlaufender Nuten (59) an der Verbindung zur ersten Abstandshalteeinrichtung ausgebildet ist, wobei die Längsausdehnung jeder der Nuten jeweils in Parallelausrichtung zu jedem Randglied (45) der ersten Abstandshalteeinrichtung angeordnet ist, wobei Größe und Form der Nuten (59) so beschaffen sind, dass sie die gegenüberliegenden, sich nach außen erstreckenden Längsränder (25a) des Verstärkungsglieds (23) befestigend aufnehmen. 45 50 55
14. Abstandshalter für Zwischenfugen (43) nach Anspruch 13 zur Schaffung eines Zwischenraums für eine Endzwischenfuge am Ende einer rechteckigen Matrix der Bausteine (11), weiterhin **dadurch gekennzeichnet, dass** die erste Abstandshalteeinrichtung nur an einer Seite des Abstandshalters für Zwischenfugen (43) über die zweite Abstandshalteeinrichtung herausragt, wobei die gegenüberliegende Seite (43a) des Abstandshalters für Zwischenfugen (43) planar ist, um in eine planare Oberfläche gegenüber dem Ende der rechteckigen Matrix der Bausteine einzugreifen.
15. Abstandshalter für Zwischenfugen (43) nach Anspruch 13 oder 14 zur Schaffung eines Zwischenraums für eine Endzwischenfuge am Ende einer rechteckigen Matrix der Bausteine (11), weiterhin **dadurch gekennzeichnet, dass** der Stegabschnitt (49) mit einer oder mehreren Öffnungen (53) versehen ist, um die Befestigung des Abstandshalters für Zwischenfugen (43) an einer planaren Oberfläche gegenüber dem Ende der rechteckigen Matrix der Bausteine (11) zu erleichtern.
16. Abstandshalter für Zwischenfugen (43) nach einem der Ansprüche 13 bis 15, weiterhin **dadurch gekennzeichnet, dass** der Stegabschnitt (49) mit einer mittigen Öffnung (51) versehen ist, durch die sich das Verstärkungsglied (23) erstrecken kann.
17. Abstandshalter für Zwischenfugen (43) nach Anspruch 16, weiterhin **dadurch gekennzeichnet, dass** der Stegabschnitt (49) in zwei Teile (49a, 49b) unterteilt ist, die jeweils die Randglieder (47) der zweiten Abstandshalteeinrichtung verbinden, wobei jedes Teil (49a, 49b) mit einer aufrecht stehenden Schiene (55) ausgebildet ist, die sich zwischen den Randgliedern (47) der zweiten Abstandshalteeinrichtung erstreckt.
18. Abstandshalter für Zwischenfugen (43) nach Anspruch 16 oder 17, weiterhin **dadurch gekennzeichnet, dass** der Stegabschnitt (49) einen Endflansch (57) aufweist, der an jedem der Enden angeordnet ist und seitlich von der Seite jedes Randglieds (47) der zweiten Abstandshalteeinrichtung herausragt.
19. Verstärkungssystem mit Abstandshaltern für Zwischenfugen zur Anordnung und Unterstützung mehrerer Bausteine (11) in einer rechteckigen Matrix einer Wandkonstruktion, wobei die Bausteine (11) derart sind, dass sie zwei parallele, rechteckige Seitenflächen (13) und vier aneinander angrenzende Endflächen (15) aufweisen, die orthogonal und unter Berührung an die entsprechenden Kanten (17) der Seitenflächen (13) und ihre Enden (19) angrenzen und so einen ununterbrochenen Umfangsrand (21) des Bausteins (11) bilden, wobei das Profil

des Umfangsrand (21) im Wesentlichen konkav ist, wobei die entsprechenden Kanten (17) der Seitenflächen (13) eine äußere Spitze (21b) entlang den gegenüberliegenden Seiten jeder Endfläche (15) festlegen, wobei das System **dadurch gekennzeichnet ist, dass es**

ein längliches, im Wesentlichen planares Verstärkungsglied (23) mit einem Paar gegenüberliegender, sich ausdehnender Seiten (23a, 23b) aufweist und

mehrere Abstandshalter für Zwischenfugen (31, 43) zur Positionierung und Unterstützung der Bausteine (11) in einer Anordnung mit Zwischenräumen zueinander an den Zwischenfugen zwischen den Bausteinen (11), wobei der Abstandshalter für Zwischenfugen (31, 43) die in einem der Ansprüche 1 bis 18 beanspruchte Form aufweist.

20. Verstärkungssystem mit Abstandshaltern für Zwischenfugen nach Anspruch 19, weiterhin **dadurch gekennzeichnet, dass** das Verstärkungsglied (23) eine abgeflachte Form aufweist, wobei jedes Ende (2) einen verdickten Flügel (25) aufweist, die durch einen mittigen Steg (27) verbunden sind, wobei der mittige Steg (27) eine dünnere Abmessung aufweist als die Flügel (25) und so eine Längsnut bildet.

21. Konstruktionssystem für eine Wand aus Bausteinen, **gekennzeichnet durch** mehrere Bausteine (11), die zwei parallele, rechteckige Seitenflächen (13) und vier aneinander angrenzende Endflächen (15) aufweist, die orthogonal und in Berührung an die entsprechenden Kanten (17) der Seitenflächen (13) und ihre Enden (19) angrenzen und so einen ununterbrochenen Umfangsrand (21) des Bausteins (11) bilden, wobei das Profil des Umfangsrand (21) im Wesentlichen konkav ist, wobei die entsprechenden Kanten (17) der Seitenflächen (13) eine äußere Spitze (21b) entlang den gegenüberliegenden Seiten jeder Endfläche (15) festlegen; ein Verstärkungssystem mit Abstandshaltern für Zwischenfugen nach einem der Ansprüche 19 und 20; und ein Bindemittel zum Ausfüllen der äußeren Zwischenräume der Fugen der Matrix, die **durch** die Bausteine (11) und das Verstärkungssystem mit Abstandshaltern für Zwischenfugen ausgebildet werden, um diese zu verbinden und eine stabile Wandkonstruktion zu bilden.

22. Konstruktionssystem für eine Wand aus Bausteinen nach Anspruch 21, weiterhin **dadurch gekennzeichnet, dass** das Bindemittel eine Silikondichtmasse ist.

Revendications

1. Entretoise de jonction interstitielle (31, 43) pour positionner et supporter une pluralité de blocs (11) sous la forme d'une matrice pour une construction de mur, lesdits blocs (11) étant du type comportant deux faces latérales rectangulaires parallèles (13) et quatre faces d'extrémité contiguës (15), qui raccordent orthogonalement les bords correspondants (17) des faces latérales (13) et les extrémités (19) entre eux d'une manière contiguë pour former un bord circonférentiel continu (21) du bloc (11), le profil du bord circonférentiel (21) étant essentiellement concave, les bords correspondants (17) des faces latérales (13) définissant un poids de rebroussement extérieur (21b) le long des côtés opposés de chacune desdites faces d'extrémité (15); ladite entretoise (31) comprenant:

un premier moyen d'entretoisement comportant une paire d'éléments de bord coplanaires (33, 47) ayant une épaisseur prescrite pour séparer ladite première face d'extrémité (15) d'une face d'extrémité en vis-à-vis (15) d'un autre desdits blocs (11) ou une surface disposée en position adjacente en aboutement contre ledit premier bloc (11); et

une partie formant âme de raccordement (35, 49) disposée entre lesdits éléments de bord (33, 47) dudit premier moyen d'entretoisement pour raccorder d'un seul tenant lesdits éléments de bord (33, 47) entre eux;

caractérisée par :

(i) un autre moyen d'entretoisement (34, 45) ayant une épaisseur prescrite et disposé de manière à croiser ladite paire d'éléments de bord coplanaires (33, 47) pour être réuni d'un seul tenant à ces derniers;

(ii) ladite paire d'éléments de bord coplanaires (33, 47) et ladite autre paire d'éléments de bord coplanaires (34, 45) étant séparées par une distance correspondant à l'espacement d'une paire de points de rebroussement correspondants parmi lesdits points de rebroussement extérieurs (21b) desdits blocs (11) de telle sorte que ledit premier moyen d'entretoisement peut être placé en étant juxtaposé aux points extérieurs de rebroussement (21b) du bord circonférentiel (21) du premier desdits blocs (11) le long de la première face d'extrémité (15) dudit premier bloc (11) et ledit autre moyen d'entretoisement pouvant être placé d'une manière juxtaposée aux points de rebroussement extérieur (21b) du bord circonférentiel (21) dudit premier bloc (11) le long de ladite face d'extrémité (15) adjacente à angle droit à ladite pre-

mière face d'extrémité dudit premier bloc, pour séparer ladite face d'extrémité (15) adjacente à angle droit, d'une face d'extrémité (15), située en vis-à-vis, dudit autre bloc (11) ou une surface disposée en position adjacente en aboutement contre ledit premier bloc; et
 (iii) ledit premier moyen d'entretoisement ou ledit autre moyen d'entretoisement est pourvu de moyens de retenue d'un élément de renfort entre lesdits éléments de bord (33, 47) dudit premier moyen d'entretoisement ou respectivement entre les éléments de bord de ladite autre paire d'éléments de bord coplanaires (34, 45), pour loger et recevoir, en le retenant, un élément de renfort allongé essentiellement plat (23), dans une disposition coplanaire avec lesdits éléments de bord (33, 47) et selon une disposition perpendiculaire audit autre moyen d'entretoisement, ou vice-versa, respectivement.

2. Entretoise de jonction interstitielle (31, 43) selon la revendication 1, **caractérisée en outre en ce qu'une** surface extérieure (34a) de chacun desdits éléments de bord (34, 45) dudit premier ou dudit autre moyen d'entretoisement possède une forme rétrécie vers l'intérieur à partir d'une extrémité proximale de chacun desdits éléments de bord (34, 45), jusqu'à une extrémité distale de ce dernier.
3. Entretoise de jonction interstitielle (31, 43) selon la revendication 1 ou 2, **caractérisée en outre en ce que** ladite partie formant âme (35, 49) fait partie desdits moyens de retenue de l'élément de renfort, en étant disposé de façon contiguë entre lesdits éléments de bord (33, 47) dudit premier moyen d'entretoisement, en étant placé selon une disposition sensiblement coplanaire avec eux et étant sollicité vers un côté de ces éléments, comportant: (i) une surface extérieure (35a) ayant une forme approximativement complémentaire dudit profil dudit bord circonférentiel (21) dudit bloc (11), le profil de ladite surface extérieure (35a) étant essentiellement convexe de manière à être disposé entre lesdits points de rebroussement extérieurs (21b) d'une paire desdites faces d'extrémité (15), alignées selon une disposition rectiligne, desdits blocs adjacents, et (ii) une surface intérieure en renforcement (35b) destinée à s'appliquer contre et à se raccorder à ladite entretoise de jonction interstitielle (31, 43), audit élément de renfort (23) et loger ledit élément de renfort (23) dans un interstice de la paire desdits blocs (11) en aboutement, séparés par ledit premier moyen d'entretoisement.
4. Entretoise de jonction interstitielle (31) selon la revendication 3, pour séparer une jonction interstitielle intermédiaire à l'intérieur d'une matrice rectangu-

laire dudit bloc (11), chacun desdits blocs (11) incluant un point de rebroussement intérieur central (21c) disposé entre lesdits points de rebroussement extérieurs (21b) de chacune desdites faces d'extrémité (15), ledit point de rebroussement intérieur (21c) s'étendant continûment le long dudit bord circonférentiel (21) dudit bloc, **caractérisée en outre en ce que** ladite partie formant âme de raccordement (35) est pourvue d'une rainure longitudinale centrale (37) s'étendant le long de ladite surface extérieure (35a) pour loger une paire desdits points de rebroussement intérieurs (21c), alignés selon une disposition rectiligne, d'une paire desdits blocs adjacents (11) dans ladite matrice rectangulaire.

5. Entretoise de jonction interstitielle (31) selon l'une quelconque des revendications 1 à 4, servant à séparer une jonction interstitielle intermédiaire à l'intérieur d'une matrice rectangulaire desdits blocs (11), **caractérisée en outre par** une pluralité de pattes d'entretoisement (39) qui font saillie vers l'extérieur et sont disposées le long de ladite surface extérieure (35a) de ladite partie formant âme de raccordement (35) au niveau des jonctions opposées entre ladite partie formant âme (35) et lesdits éléments de bord (33) dudit premier moyen d'entretoisement, lesdites pattes d'entretoisement (39) étant disposées angulairement de manière à faire saillie longitudinalement vers l'intérieur à partir de chacun desdits éléments de bord (33) pour s'appliquer contre la surface concave (21a) de ladite face d'extrémité (15) dudit bloc adjacent (11) pour faciliter le positionnement de ladite entretoise de jonction interstitielle (31) à l'intérieur des limites de ladite face d'extrémité (15) dudit bloc adjacent.
6. Entretoise de jonction interstitielle (31) selon l'une quelconque des revendications 1 à 5, pour séparer une jonction interstitielle intermédiaire à l'intérieur d'une matrice rectangulaire desdits blocs (11), **caractérisée en outre par** une pluralité de pattes d'entretoisement opposées (41), qui font saillie extérieurement à partir de chacun desdits éléments de bord (33) dudit premier moyen d'entretoisement à proximité des jonctions opposées entre lesdits éléments de bord (33) et ladite partie formant âme de raccordement (35) adjacente à ladite surface intérieure en renforcement de ladite partie formant âme (35b), lesdites pattes d'entretoisement opposées (41) étant disposées angulairement de manière à faire saillie marginalement vers l'intérieur à partir de chacun desdits éléments de bord (33) pour s'appliquer contre la surface concave (21a) d'une face d'extrémité (15) d'un bloc adjacent (11) et pour y retenir partiellement lesdits éléments de renfort (23).

7. Entretoise de jonction interstitielle (31) selon l'une quelconque des revendications 1 à 6, servant à séparer une jonction interstitielle intermédiaire à l'intérieur d'une matrice rectangulaire desdits blocs (11), **caractérisée en outre par** une paire de pattes de retenue (42) faisant également partie desdits moyens de retenue de l'élément de renfort, l'une desdites pattes de retenue étant disposée le long de chaque bord intérieur desdits autres éléments de bord (34) dudit autre moyen d'entretoisement à proximité de la jonction avec le bord intérieur (33b) desdits éléments de bord correspondants (33) dudit premier moyen d'entretoisement, lesdites pattes de retenue (42) faisant saillie marginalement vers l'intérieur au-dessus de ladite surface intérieure en renforcement (35b) de ladite partie formant âme (35) pour définir une surface en surplomb essentiellement parallèle à ladite surface intérieure en renforcement (35b) pour retenir en position ledit élément de renfort (23).
8. Entretoise de jonction interstitielle (31) selon la revendication 7, **caractérisée en ce que** lesdites pattes de retenue (42) possèdent chacune une surface extérieure de forme rétrécie qui s'étend le long dudit bord intérieur dudit autre élément de bord (34) jusqu'à ladite surface en surplomb de manière à faciliter le positionnement dudit élément de renfort à l'intérieur de la surface intérieure en renforcement.
9. Entretoise de jonction interstitielle (31) selon l'une quelconque des revendications 5 à 8, **caractérisée en outre en ce que** lesdites pattes d'entretoisement (39) sont formées d'une matière flexible élastique.
10. Entretoise de jonction interstitielle (31) selon l'une quelconque des revendications 6 à 9, **caractérisée en outre en ce que** lesdites pattes d'entretoisement opposées (41) sont formées d'une matière flexible élastique.
11. Entretoise de jonction interstitielle (31) selon l'une quelconque des revendication 7 à 10, **caractérisée en outre en ce que** lesdites pattes de retenue (42) sont formées d'une matière flexible élastique.
12. Entretoise de jonction interstitielle (31, 43) selon l'une quelconque des revendication 1 à 11, **caractérisée en ce que** ladite surface intérieure en renforcement (35b) possède une forme essentiellement complémentaire d'un côté (23a, 23b) dudit élément de renfort (23), ce qui a pour effet que les bords intérieurs opposés (33b) de ladite surface intérieure en renforcement (35b) sont définis par les bords intérieurs (33b) desdits éléments de bord opposés (33, 47) dudit premier moyen d'entretoisement de manière à coopérer avec les bords longitudinaux opposés (25a) dudit élément de renfort (23).
13. Entretoise de jonction interstitielle (43) selon la revendication 1 ou 2, **caractérisée en outre en ce que** ledit autre moyen d'entretoisement est formé avec une paire de rainures transversales opposées (59) au niveau de la jonction avec ledit premier moyen d'entretoisement, l'étendue longitudinale de chacune desdites rainures étant disposée respectivement selon un alignement parallèle, chacun desdits éléments de bord (45) dudit premier moyen d'entretoisement, lesdites rainures (59) étant dimensionnées et conformées de manière à loger, de manière à les retenir, les bords longitudinaux opposés (25a) dudit élément de renfort (23).
14. Entretoise de jonction interstitielle (43) selon la revendication 13, servant à séparer une jonction interstitielle d'extrémité au niveau de l'extrémité d'une matrice rectangulaire desdits blocs (11), **caractérisée en outre en ce que** ledit premier moyen d'entretoisement fait saillie à partir dudit autre moyen d'entretoisement uniquement sur une face de ladite entretoise de jonction interstitielle (43), le côté opposé (43a) de ladite entretoise de jonction interstitielle (43) étant plat de manière à s'appliquer contre une surface plane située en vis-à-vis de ladite extrémité de ladite matrice rectangulaire dudit bloc.
15. Entretoise de jonction interstitielle (43) selon la revendication 13 ou 14, servant à séparer une jonction interstitielle d'extrémité à l'extrémité d'une matrice rectangulaire desdits blocs (11), **caractérisée en outre en ce que** ladite partie formant âme (49) est pourvue d'un ou de plusieurs trous (53) pour faciliter la fixation de ladite entretoise de jonction interstitielle (43) sur une surface plane située en vis-à-vis de ladite extrémité d'une matrice rectangulaire desdits blocs (11).
16. Entretoise de jonction interstitielle (43) selon l'une quelconque des revendications 13 à 15, **caractérisée en outre en ce que** ladite partie formant âme (49) est pourvue d'une ouverture centrale (51), dans laquelle ledit élément de renfort (23) peut s'étendre.
17. Entretoise de jonction interstitielle (43) selon la revendication 16, **caractérisée en outre en ce que** ladite partie formant âme (49) est divisée en deux éléments (49a, 49b) raccordant entre eux respectivement lesdits éléments de bord (47) dudit autre moyen d'entretoisement, chaque partie (49a, 49b) étant formée d'un rail longitudinal montant (55) qui s'étend entre lesdits éléments de bord (47) dudit autre moyen d'entretoisement.

18. Entretoise de jonction interstitielle (43) selon la revendication 16 ou 17, **caractérisée en outre en ce que** ladite partie formant âme (49) inclut une bride d'extrémité (57) disposée au niveau d'une extrémité de manière à faire saillie latéralement à partir du côté de chacun desdits éléments de bord (47) dudit autre moyen d'entretoisement. 5
19. Système d'entretoise interstitielle de renfort pour positionner et supporter une pluralité de blocs (11) sous la forme d'une matrice pour une construction de mur, lesdits blocs (11) étant du type comportant deux faces latérales rectangulaires parallèles (13) et deux des quatre faces d'extrémité contiguës (15), qui raccordent orthogonalement les bords correspondants (17) des faces latérales (13) et les extrémités (19) entre eux d'une manière contiguë pour former un bord circonférentiel continu (21) du bloc (11), le profil du bord circonférentiel (21) étant essentiellement concave, les bords correspondants (17) des faces latérales (13) définissant un point de rebroussement extérieur (21b) le long des côtés opposés de chacune desdites faces d'extrémité (15); ledit système étant **caractérisé par**: 10 15 20 25
- un élément de renfort allongé essentiellement plat (23) possédant une paire de côtés étendus opposés (23a, 23b); et
- une pluralité d'entretoises de jonctions interstitielles (31, 43) pour positionner et supporter lesdits blocs (11) d'une manière espacés les uns des autres au niveau des jonctions interstitielles entre lesdits blocs (11), l'une desdites entretoises de jonction interstitielles (31, 43) possédant la forme telle que revendiquée dans l'une quelconque des revendications 1 à 18. 30 35
20. Système d'entretoise interstitielle de renfort selon la revendication 19, **caractérisé en outre en ce que** ledit élément de renfort (23) possède une forme aplatie, chaque extrémité (2) comprenant une aile épaissie (25) raccordée par une âme centrale (27), ladite âme centrale (27) ayant une dimension plus mince que lesdites ailes (25) de manière à former une rainure allongée. 40 45
21. Système de construction de mur formé de blocs, **caractérisé par** :
- une pluralité de blocs (11) du type comportant deux faces latérales rectangulaires parallèles (13) et quatre faces d'extrémité contiguës (15), qui raccordent orthogonalement les bords correspondants (17) des faces latérales (13) et les extrémités (19) entre eux d'une manière contiguë pour former un bord circonférentiel continu (21) du bloc (11), le profil du bord circonférentiel (21) étant essentiellement concave, les bords correspondants (17) des faces latérales (13) définissant un point de rebroussement extérieur (21b) le long des côtés opposés de chacune desdites faces d'extrémité (15); un système d'entretoises interstitielles de renfort selon l'une quelconque des revendications 19 et 20; et un liant pour remplir les espaces extérieurs des interstices de ladite matrice formée par lesdits blocs (11) et ledit système d'entretoises interstitielles de renfort pour réunir ces éléments entre eux et former une construction de mur stable. 50 55
22. Système de construction de parois formées de blocs selon la revendication 21, **caractérisé en outre en ce que** le liant est un matériau de calfatage au silicone.

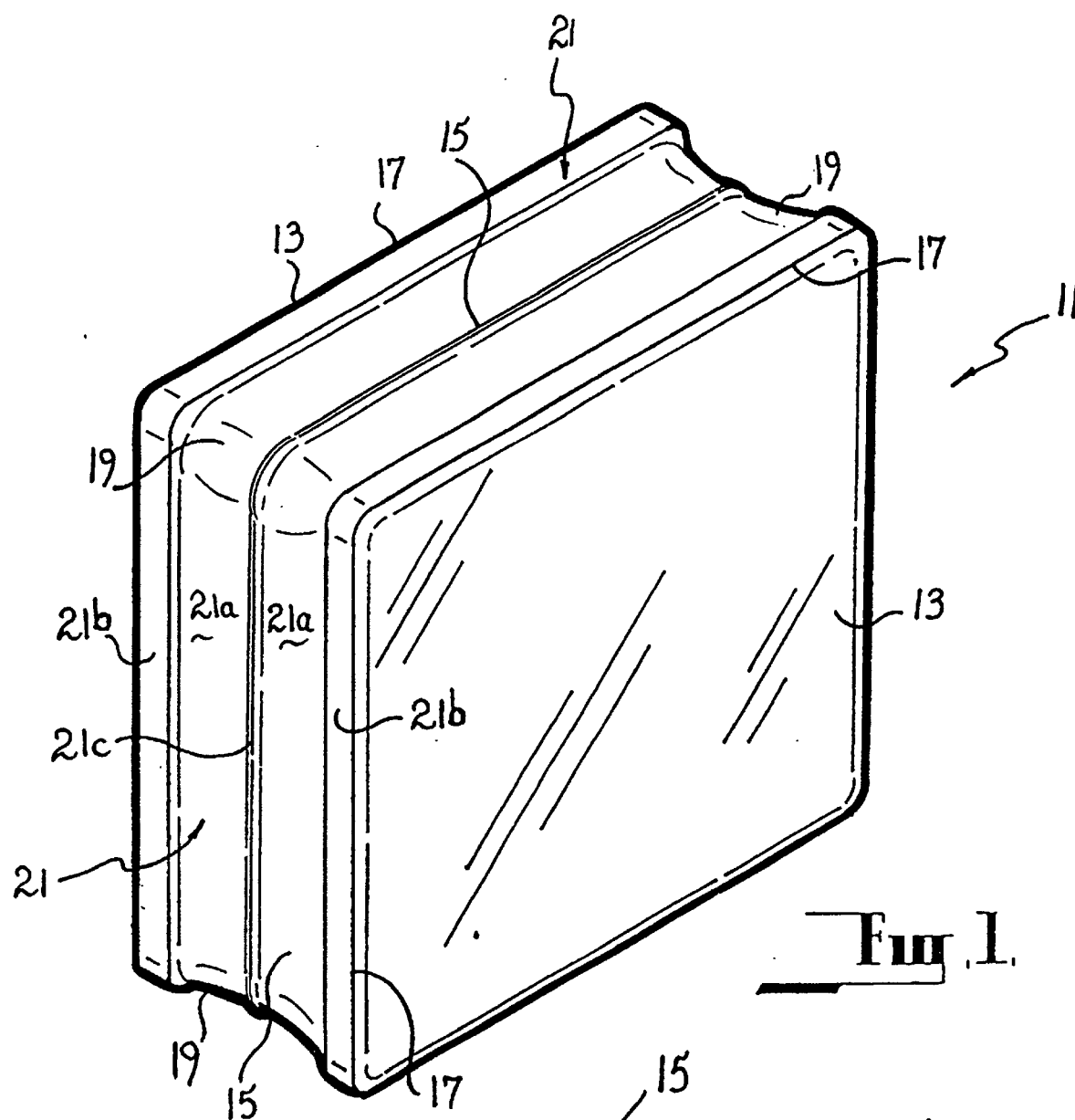


Fig. 1.

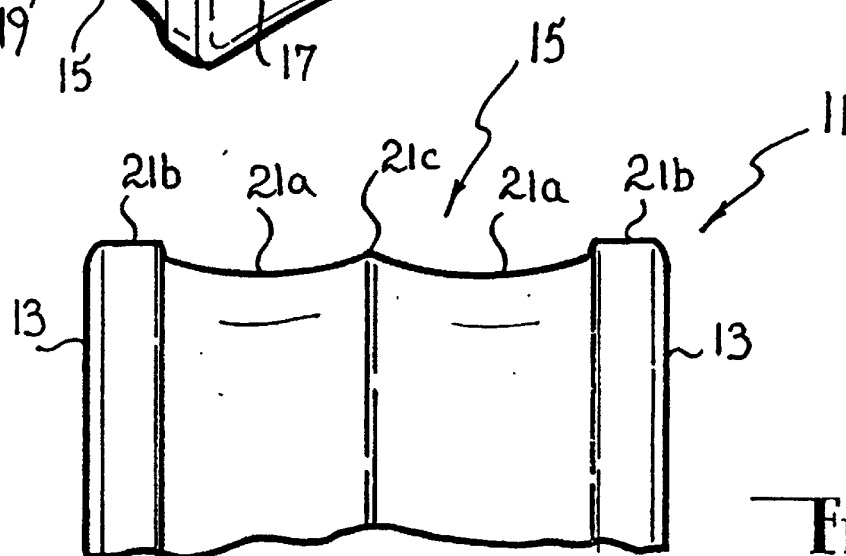


Fig. 2.

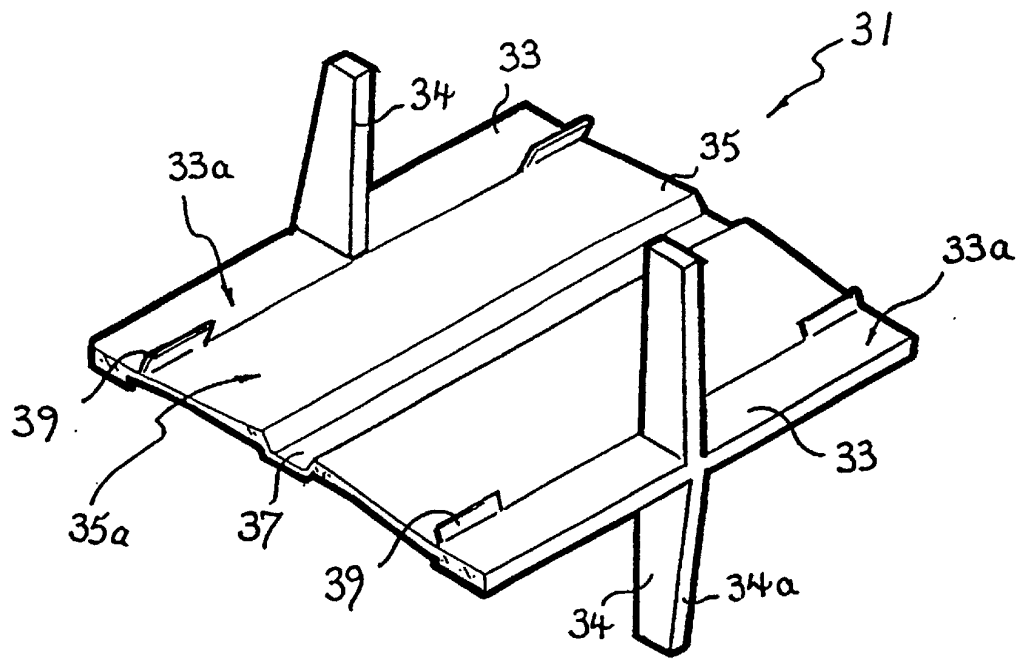


Fig. 3.

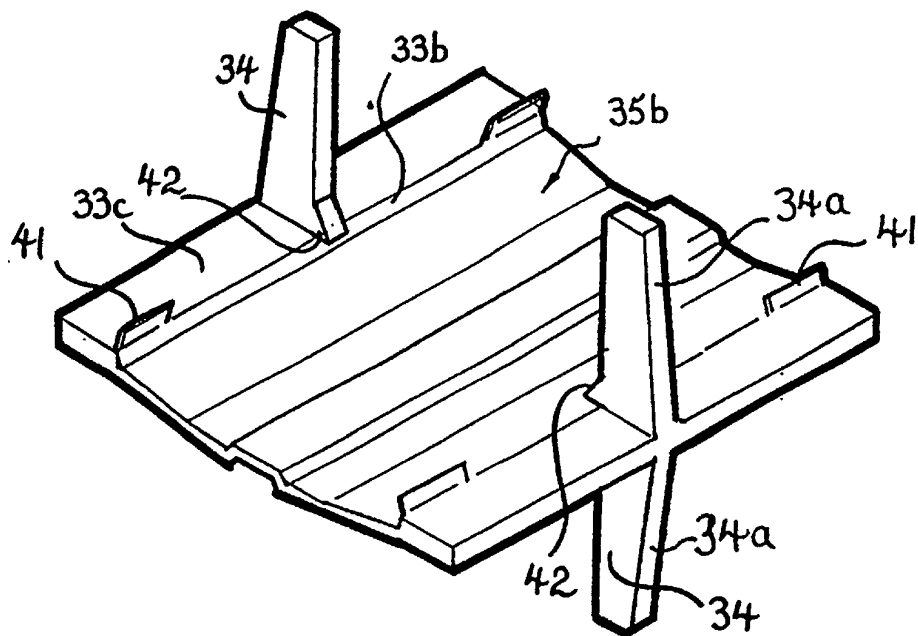


Fig. 4.

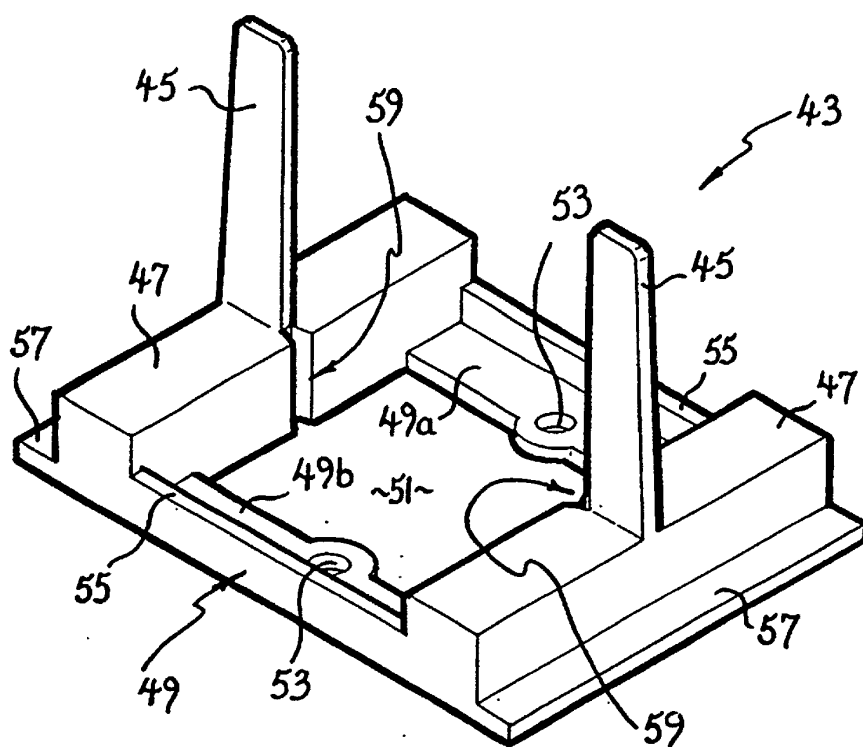


Fig. 5.

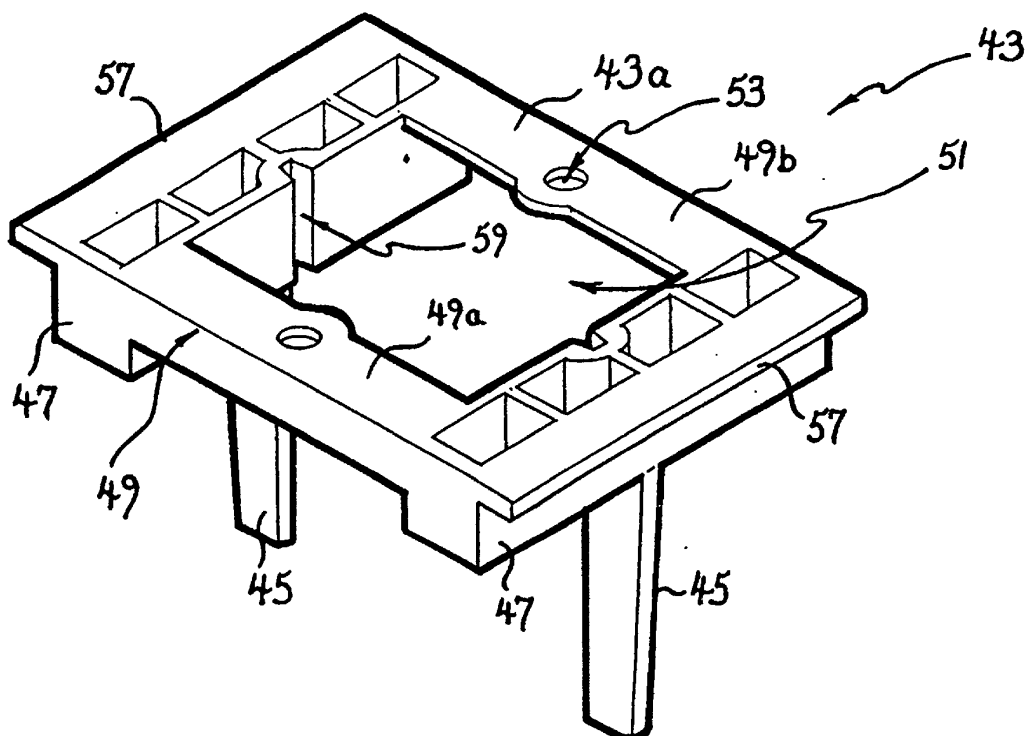
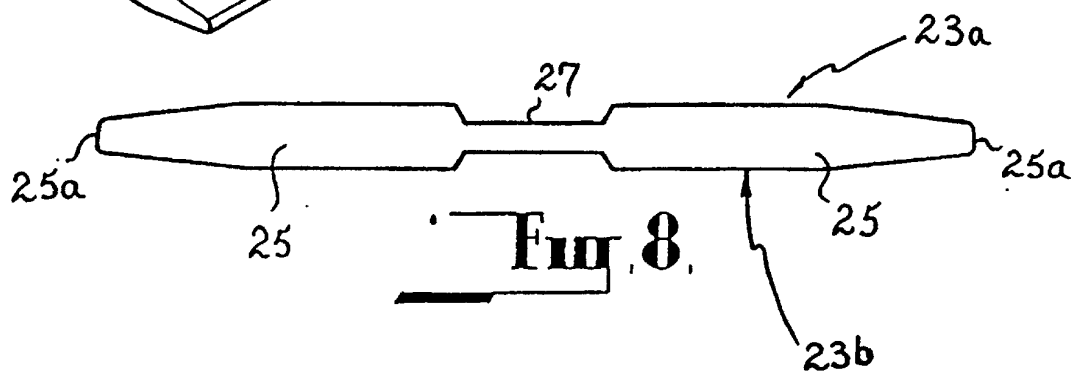
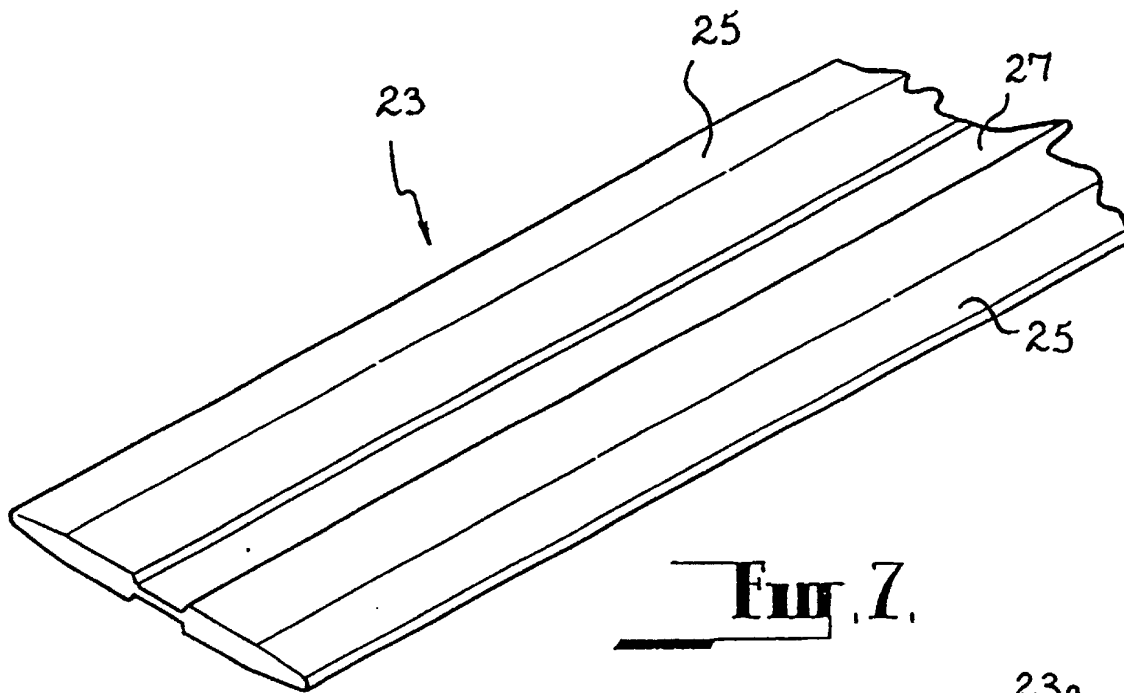


Fig. 6.



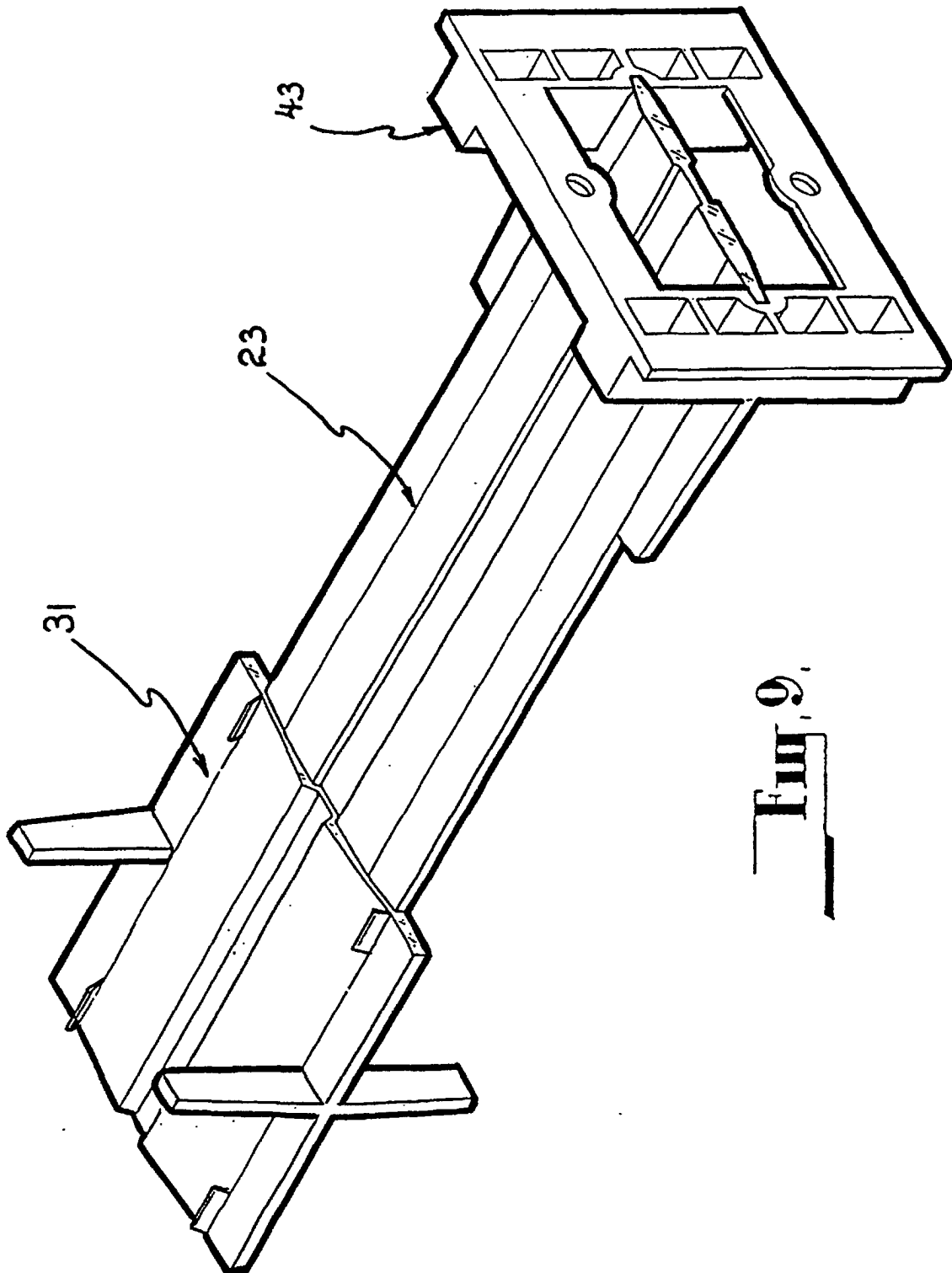


Fig. 9

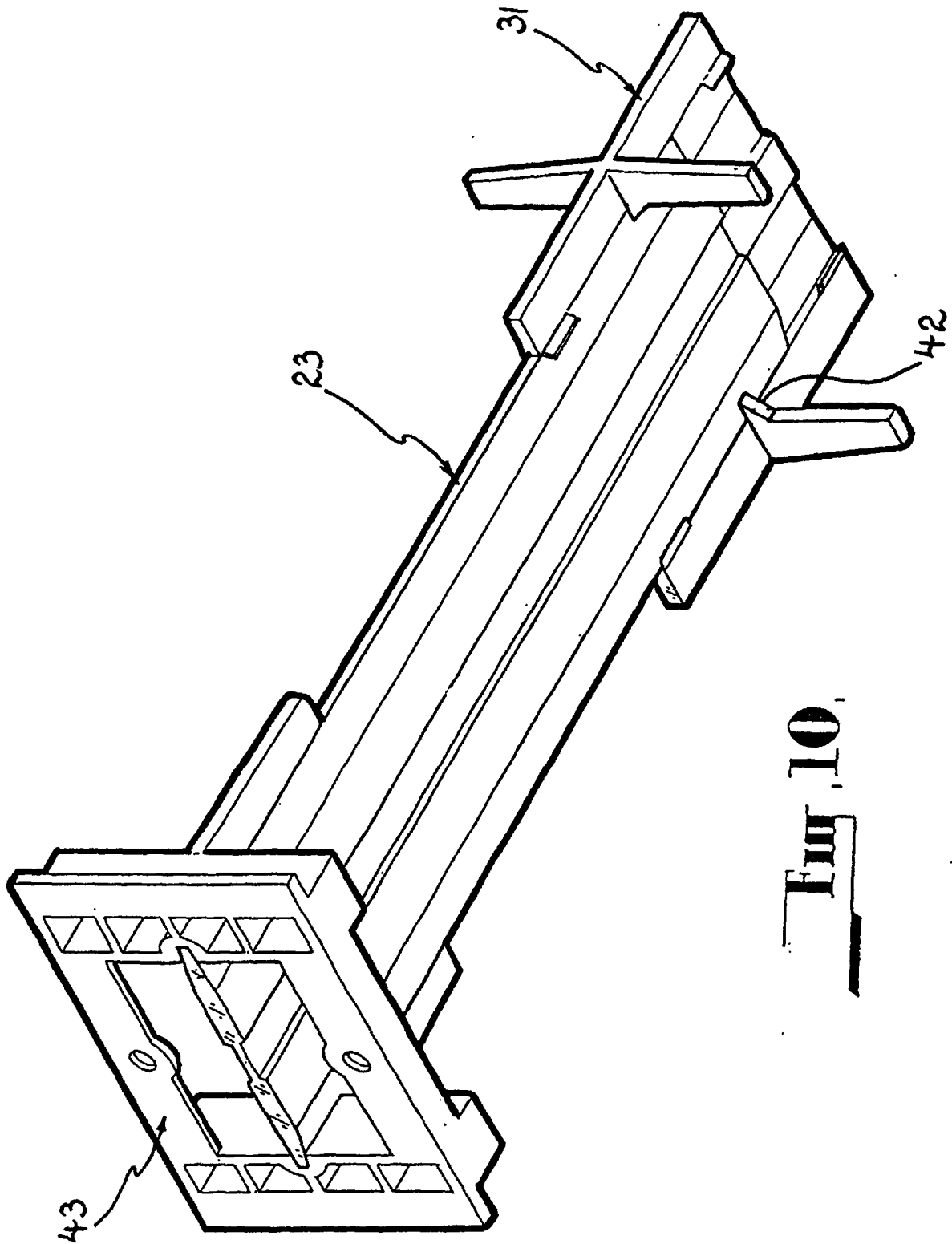


Fig. 10

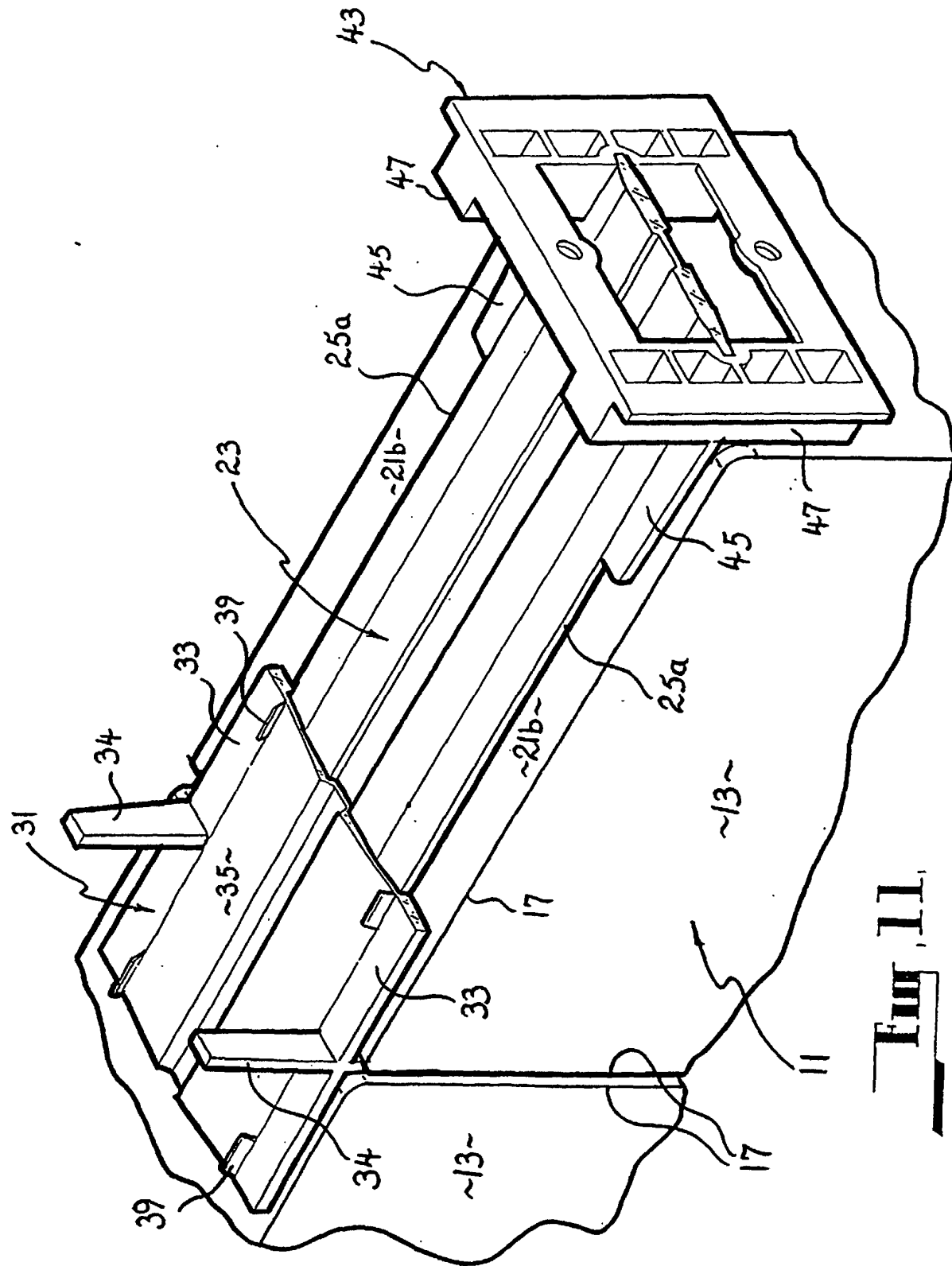
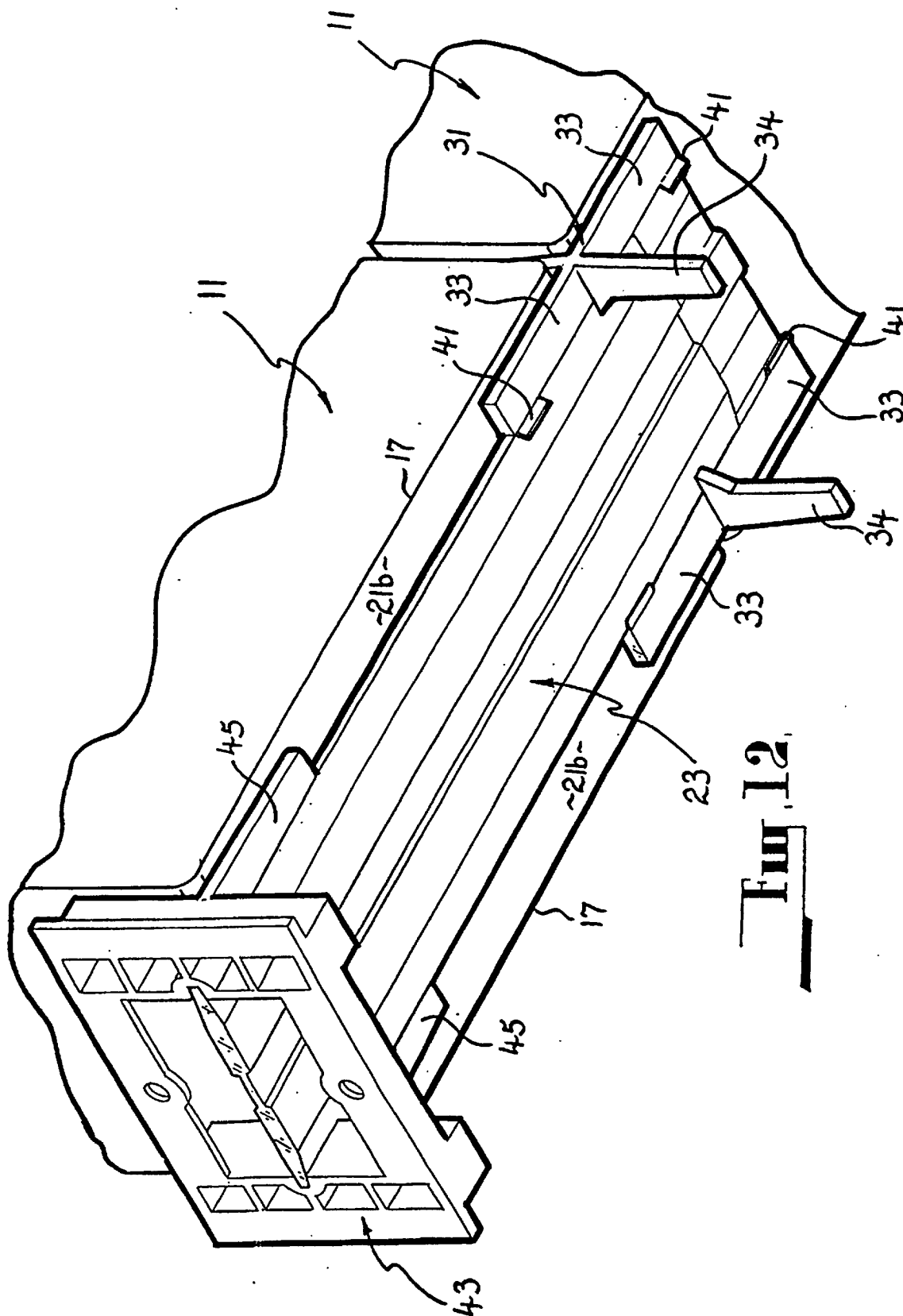


Fig. 11



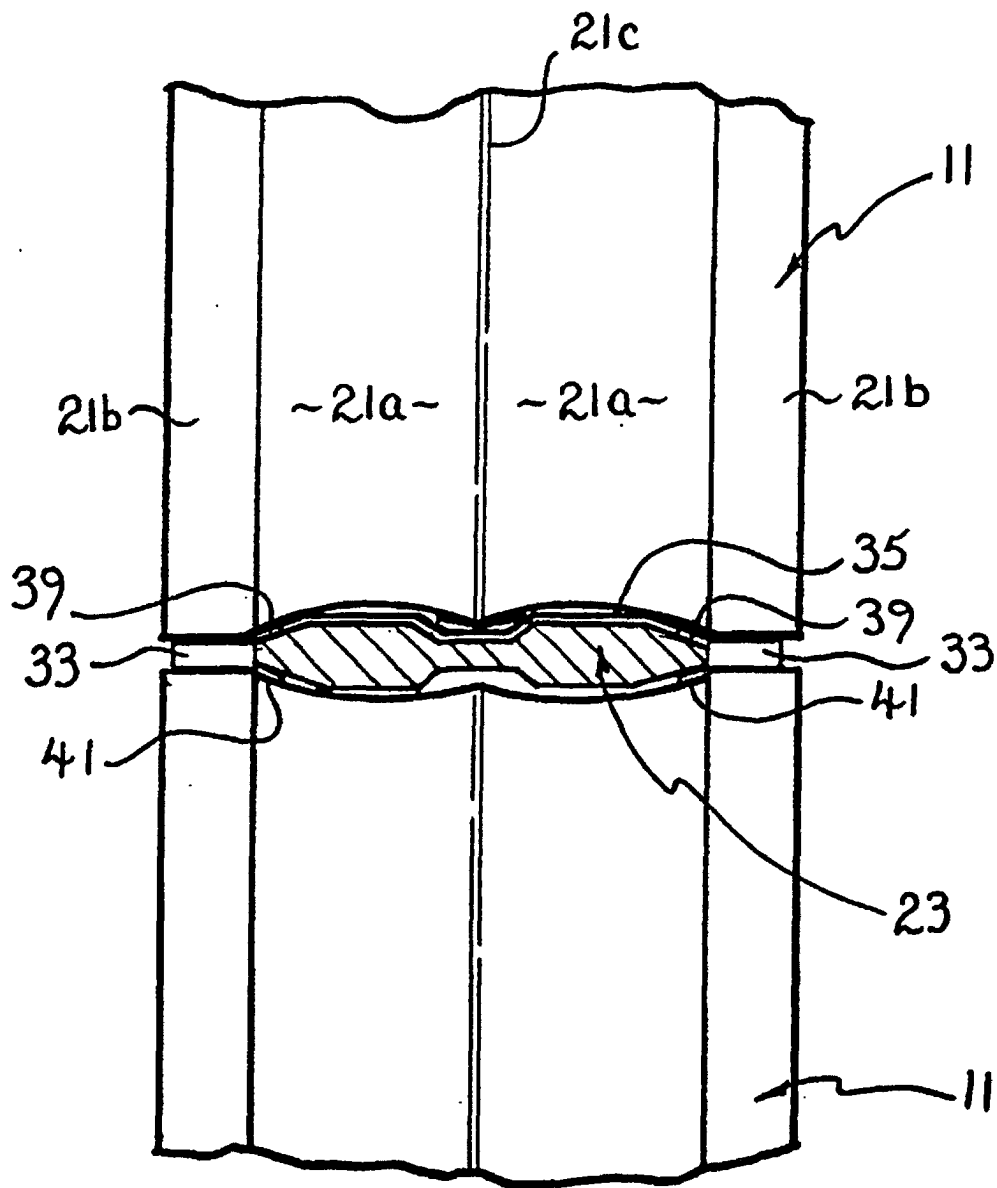


Fig. 13.

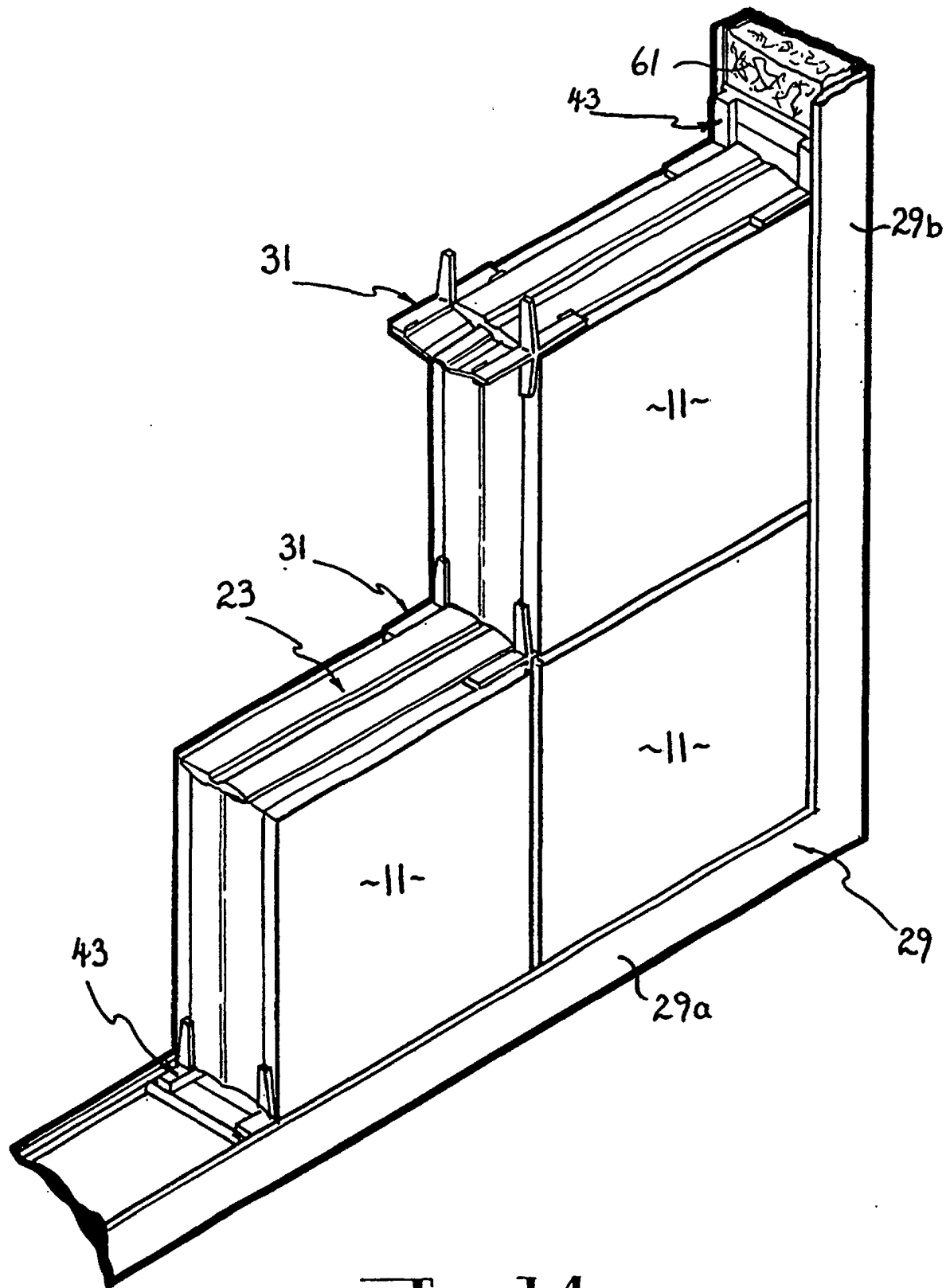


Fig. 14.